



City of Roanoke Invitation to Bid

Date: December 4, 2015

Bid Number: ITB# 16-05-02 Cast In Place Drop Inlets		Bid Opening Date: December 17, 2015 Bid Opening Time: 2:00 p.m.		
Legal Name of Bidder (SCC Registration):				
Mailing Address:				
Terms: Net 30				
Delivery:				
Phone:		Fax:		E-mail:
Acknowledge each addendum received:	# Date	# Date	# Date	# Date
Printed name of authorized person submitting Bid:				
Issued by:	City of Roanoke Purchasing Division Noel C. Taylor Municipal Building 215 Church Ave SW, Room 202 Roanoke, VA 24011		Monica Cole Senior Buyer Phone: 540-853-5268 Email: monica.cole@roanokeva.gov	

THIS PUBLIC BODY DOES NOT DISCRIMINATE AGAINST FAITH BASED ORGANIZATIONS

No Bid may be withdrawn within a period of sixty (60) days after Bid opening except for clerical errors, as set forth in part (1) of Section 2.2-4330(B), Virginia Code, 1950, as amended.

The City reserves the right to cancel or reject any or all Bids and to waive any informalities in any Bid.

This Invitation to Bid consists of these parts:

1. All Sections of the Invitation to Bid.
2. Specifications and Plan Documents (Attachment A).
3. Bid Form (Attachment B).
4. Sample Contract (Attachment C).
5. Cards Payable Application (Attachment D).

**CITY OF ROANOKE, VIRGINIA
INVITATION TO BID NO. 16-05-02**

SECTION 1. PURPOSE: The purpose of this Invitation to Bid (ITB) is the procurement of provision and installation of cast in place drop inlets. The required work will consist of new concrete cast in place drop inlets in association with a City of Roanoke Stormwater Maintenance Project.

The City of Roanoke invites any qualified Bidder to respond to this ITB by submitting a Bid for such work, service, and/or items consistent with the terms and conditions herein set forth.

SECTION 2. NOT USED.

SECTION 3. SERVICES AND/OR ITEMS REQUIRED:

A description and/or listing of the services and/or items that the Successful Bidder will be required to provide to the City under this ITB are those that are set forth in Exhibit 2 of the Sample Contract (Attachment C) attached to this ITB. Each Bidder should carefully read and review all such documents.

The following are the services and/or items that the Successful Bidder shall provide to the City of Roanoke:

The Successful Bidder shall provide and install three cast in place drop inlets pursuant to the Attached Plans and Specifications (Attachment A) and Exhibit 2 of the Sample Contract (Exhibit C). ALL WORK SHALL BE PERFORMED PURSUANT TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS
(http://www.virginiadot.org/business/locdes/2008_standards_complete_sections.asp)

SECTION 4. NOT USED.

SECTION 5. TERM OF CONTRACT:

The Successful Bidder shall start the performance of any resultant Contract **as fixed by a notice to proceed given by the City to the Successful Bidder** and fully and completely perform the Contract within thirty (30) consecutive calendar days after such date, all in accordance with the Contract provisions.

SECTION 6. PAYMENT FOR SERVICES: Payment(s) to the Successful Bidder shall be made in accordance with the provisions of the resultant Contract, subject to final approval by the City.

SECTION 7. GENERAL INSTRUCTIONS TO BIDDERS:

- A. Sealed Bids, to be considered, must be received by the City of Roanoke in the Purchasing Division, 215 Church Avenue, S.W., Noel C. Taylor Municipal Building, Room 202, Roanoke, Virginia 24011, at or before 2:00 p.m., local time, on December 17, 2015, at which time all Bids received will be publicly opened and read. Bids received after 2:00 p.m. will not be accepted or considered. The time of receipt shall be determined by the time clock stamp in the Purchasing Office, or if it is not working, such time shall be determined by the Purchasing official who is to open the Bids. The ITB and related documents may be obtained from the City's Vendor Self Services system, <https://VSS.roanokeva.gov>, or during normal business hours from the Purchasing Division (540) 853-2871, or from the City's web site at <https://www.roanokeva.gov/purchasing>. If the Noel C. Taylor Municipal Building is closed for business at the time scheduled for the proposal opening, the sealed

proposal will be accepted and opened on the next business day of the City, at the originally scheduled hour.

The sealed envelope shall be clearly marked on the front of that envelope with the notation and completed information as follow:

**“Sealed Bid Number: 16-05-02.
Opening Date: December 17, 2015 and Time: 2:00 p.m.”.**

FAXED OR E-MAILED BIDS ARE NOT ACCEPTABLE.

- B. If you download this ITB from the City website and intend to submit a proposal, you should notify Purchasing that you have done so. However, each Bidder is solely responsible for ensuring that such Bidder has the current, complete version of the ITB documents, including any addenda, before submitting a bid. Receipt by the bidder of such addendum should be acknowledged on the Bid Form and/or addendum. Addenda will be posted on Vendor Self Service (VSS) at <https://VSS.roanokeva.gov> as well as the Current Bids/RFP Requests tab on the Purchasing Division’s web page at www.roanokeva.gov/purchasing. The City is not responsible for any ITB obtained from any source other than the City. Contact Monica Cole, Senior Buyer, by phone at 540-853-5268, or by email at monica.cole@roanokeva.gov.**
- C. Payment terms and delivery date(s) must be shown on the submitted Bid, if applicable.
- D. All Bids are to be submitted in accordance with all terms, conditions, rules, regulations, requirements and specifications identified in and by this ITB.
- E. Bids are to be on the Form as provided with or as otherwise specified in this ITB. If a Bid Form is provided, no changes are to be made to the Bid Form. Any changes to Bid amounts must be initialed.
- F. All Bids shall be signed by a person on behalf of the responding Bidder who is appropriately authorized to do so. The printed name of that authorized person should be shown as well. Any Bid submitted should be in the complete legal name of the Bidder responding. No Bid will be considered from any Bidder not properly licensed as may be required by law.
- G. Bids that have been appropriately opened cannot be changed, adjusted, corrected or modified in any way other than complete withdrawal. The City’s procedures for withdrawal of bids (whether construction or other than construction) is that set forth in Code of Virginia, §2.2-4330(A)&(B)(1), which allows withdrawal of a Bid due to an error such as an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a Bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the Bid. Withdrawal must be requested within two days of the Bid opening by delivering to the City original work papers, documents, and materials used in preparation of the Bid.
- H. All Bids, appropriately received, will be evaluated by considering the requirements set forth in the ITB, the quality, workmanship, economy of operation, suitability for intended purpose, delivery, payment terms and price of product or service being requested in this Bid.
- I. Bids are to be submitted on the type, brand, make, and/or kind of product and/or service requested or its approved equal, to be solely determined by the City, unless otherwise specified. Should a Bid be for a product and/or service as an equal, the name, make, model and type of that which is being Bid must be clearly stated. The Bid must also be accompanied by descriptive literature of the product or service Bid to allow for evaluation. Failure to provide this information may result in the Bid being considered non-responsive and may not be considered.

- J. If an award is made for the item(s) and/or services requested, a notice of award will be made which will be posted to a file in the City's Purchasing Division, Room 202, telephone no. 540-853-2871, and notification of such award will be made available for Public view in the lobby of the Noel C. Taylor Municipal Building, 215 Church Ave., S.W., Roanoke, VA. 24011, as well as, on City's electronic procurement website. Upon completion of the Contract, payment will be made only to the Successful Bidder at the address as shown on the Contract. If the remittance address is other than the address on the Bid, it must be clearly noted and explained in the Bid. Contract(s) will be paid only when the items and/or services have been supplied to and approved by the City.
- K. All items, identified in this ITB, are to be quoted and provided **F.O.B. DESTINATION-INSIDE DELIVERY**, unless otherwise stated in this ITB. All furniture items, if any, are to be put together and set in place.
- L. The City reserves the right to cancel this ITB or reject any or all Bids, to waive any informalities in any Bid and to purchase any whole or part of the items and/ or services listed in the ITB.
- M. Each Bidder is to notify in writing the Purchasing Division if any of Bidder's owners, officers, employees, or agents, or their immediate family members, is currently or has been in the past year, an employee of the City of Roanoke or has any responsibility or authority with the City that might affect the procurement transaction or any claim resulting therefrom. If so, please provide the Purchasing Division with the complete name and address of each such person and their connection to the City of Roanoke. Each Bidder is advised that the Ethics in Public Contracting and Conflicts of Interests Act of the Code of Virginia, as set forth in this ITB, apply to this ITB. Such information should be provided in writing before the Bid opening date or may also be provided with the Bid response.
- N. **The attention of each Bidder is directed to VA Code Sections 54.1-1100 et seq. which requires certain licenses for contractors, tradesmen and others. Each Bidder is required to determine which license, if any, it is required to have under such sections. Each Bidder shall so state on the Bid Form, or in its response, if no Bid Form is provided, whether it has a VA license under such sections and, if so, the type of license and/or license number. Failure to include this information may result in the Bid being rejected as non-responsive.**
- O. **Bid Submittals shall include:**
1. Page 1, Invitation to Bid
 2. Pages 33-34, The Bid Form (Lump Sum Price shall include all labor, material, delivery costs, overhead and profit.)

Failure to do so may result in the Bid being determined as non-responsive.

Questions or concerns may be addressed by contacting Monica Cole, Senior Buyer, at (540) 853-5268 or by email at monica.cole@roanokeva.gov.

- P. Ethics in Public Contracting. The provisions, requirements, and prohibitions as contained in Sections 2.2-4367 through 2.2-4377, of the Virginia Code, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this ITB.
- Q. Conflict of Interests Act. The provisions, requirements, and prohibitions as contained in Sections 2.2-3100, et seq., of the Virginia Code are applicable to this ITB.
- R. The procurement provisions of the Code of the City of Roanoke (1979), as amended, Sections 23.2-1, et seq., as well as the City Procurement Manual, applies to this ITB, unless specifically modified herein. The City's Procurement Manual can be reviewed at the Purchasing office.

- S. The City may request clarification from any of the Bidders after review of the Bids received.
- T. The City is not liable for any costs incurred by any Bidder in connection with this ITB or any response by any Bidder to this ITB. The expenses incurred by a Bidder in the preparation, submission, and presentation of the Bid are the sole responsibility of the Bidder and may not be charged to the City.
- U. General and/or technical questions regarding the Scope of Services and/or items required, or procurement questions under this ITB may be directed to Monica Cole, Senior Buyer, at (540) 853-5268, or by email at monica.cole@roanokeva.gov.
- V. Each Bidder is required to state if it has ever been debarred, fined, had a contract terminated, or found not be a responsible bidder or Offer or by any federal, state, or local government and/or private entity. If so, please give the details of each such matter and include this information with Bidder's response.
- W. Each Bidder who is a stock or Nonstock Corporation, Limited Liability Company, business trust, or a limited partnership or other business entity shall be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if required by law. Each such Bidder shall include in its bid response the Identification Number issued to it by the Virginia State Corporation Commission (SCC) and should list its business entity name as it is listed with the SCC. Any Bidder that is not required to be authorized to transact business in the Commonwealth as a domestic or foreign business entity as required by law shall include in its bid response a statement describing why the Bidder is not required to be so authorized. (See Va. Code Section 2.2-4311.2).
- X. Direct contact with any City employee without the permission of the Purchasing Manager or her designated representative, on the subject of this bid, is strictly forbidden. Violation of this Instruction may result in disqualification of Bid.

SECTION 8. MISCELLANEOUS:

- A. Ownership of all data, materials, and documentation originated and prepared for the City pursuant to the ITB shall belong exclusively to the City and be subject to public inspection in accordance with the *Virginia Freedom of Information Act*. The trade secrets or proprietary information submitted by the Bidder shall not be subject to public disclosure under the *Freedom of Information Act*, unless otherwise required by law or a court. **However, the Bidder must invoke the protection of Section 2.2-4342(F) of the Code of Virginia, in writing, either before or at the time the data or other material is submitted.** The written notice must SPECIFICALLY identify the data or materials to be protected and state the reason why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. The classification of an entire proposal document, line item prices, and/or total proposal prices as proprietary, or trade secrets, is NOT ACCEPTABLE and may result in REJECTION of the Bid.
- B. All Bidders shall be solely responsible for making sure that they have the most current and complete version of this ITB and all addenda that may have been issued for this ITB and that such Bidder has examined all such documents and data. Any interpretation, correction, or change of the ITB will be made by an addendum. Interpretations, corrections or changes of this ITB made in any other manner will not be binding and Bidders must not rely upon such interpretations, corrections, or changes. The City of Roanoke Purchasing Division will issue Addenda. Addenda will be posted on Vendor Self Service (VSS) at <https://VSS.roanokeva.gov> as well as the Current Bids/RFP Requests tab on the Purchasing Division's web page at www.roanokeva.gov/purchasing.
- C. No Bidder shall confer on any public employee having official responsibility for a purchasing transaction any payment, loan, subscription, advance, deposit or money, service, or anything of more than nominal

value, present or promised, unless consideration of substantially equal or greater value is exchanged.

- D. The City may make investigations to determine the ability of the Bidder to perform the work and/or provide the services and/or items as described in this ITB. The City of Roanoke reserves the right to reject any Bid if the Bidder fails to satisfy the City of Roanoke that it is qualified to carry out the obligations and requirements requested in this ITB.
- E. The Successful Bidder must comply with the nondiscrimination provisions of Virginia Code Section 2.2-4311, which are incorporated herein by reference.
- F. The Successful Bidder must comply with the drug-free workplace provisions of Virginia Code Section 2.2-4312, which are incorporated herein by reference.
- G. It is the policy of the City of Roanoke to maximize participation by minority and women owned and small business enterprises in all aspects of City contracting opportunities.
- H. The Successful Bidder shall comply with all applicable City, State, and Federal laws, codes, provisions, and regulations. The successful Bidder shall not during the performance of any resultant contract knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- I. Providers of any outside services and/or items shall be subject to the same conditions and requirements as the Successful Bidder in regards to law, code, or regulation compliance. The City reserves the right of approval for any subcontract work, including the costs thereof.

SECTION 9. EVALUATION FOR LOWEST RESPONSIVE AND RESPONSIBLE BIDDER: To determine the lowest responsive and responsible Bidder with respect to this Bid, the following factors, among such others as will protect and preserve the interest of the City may be considered:

- A. Total Lump Sum Bid price as set forth on the Bid Form;
- B. The specified terms and discounts, if any, of the Bid;
- C. The ability, capacity and skill of the Bidder to perform the Contract and/or provide the services and/or items required;
- D. Whether the Bidder can perform the Contract and/or perform the services and/or provide the items promptly, or within the time specified, without delay or interference;
- E. The character, integrity, reputation, judgment, experience and efficiency of the Bidder;
- F. The quality of performance on previous contracts or services;
- G. The previous and existing compliance by the Bidder with laws and ordinances relating to other contracts, purchase orders, items and/or services provided by Bidder in other matters;
- H. The equipment and facilities available to the Bidder to perform the Contract and/or provide the services and/or items requested in the ITB;
- I. The sufficiency of the financial resources and ability of the Bidder to perform the Contract and/or provide the services and/or items requested in the ITB;
- J. The quality, availability, and adaptability of the supplies, materials, equipment and/or services the Bidder can provide for the particular use and/or work requested in the ITB; and
- K. The ability of the Bidder to provide future maintenance, parts, and service for the items requested in the ITB.

SECTION 10. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE: Successful Bidder, and any of its subcontractors, shall, at its sole expense, obtain and maintain during the life of the resulting Contract the insurance policies and/or bonds required. Any required insurance policies and/or bonds shall be effective prior to the beginning of any work or other performance by Successful Bidder, or any of its subcontractors, under any resultant Contract. All such insurance shall be primary and noncontributory to any insurance or self-insurance the City may have. The policies and coverages required are those as may be referred to in the sample contract attached to this ITB, but shall include workers' compensation coverage regardless of the number of employees, unless otherwise approved by the City's Risk Manager.

SECTION 11. NEGOTIATIONS WITH LOWEST RESPONSIVE AND RESPONSIBLE BIDDER: If the Bid by the lowest responsive and responsible Bidder exceeds available funds, the City reserves the right to negotiate with the apparent low Bidder pursuant to §2.2-4318 Code of Virginia. The conditions and procedures under which such negotiation may be undertaken are as follows: the appropriate City officials shall determine that the lowest responsive and responsible Bid exceeds available funds, and notify such Bidder in writing of its desire to negotiate. Thereafter, negotiations with the apparent low Bidder may be held to obtain a contract within available funds involving discussions of reduction of quantity, quality, or other cost saving mechanisms. Any such negotiated contract shall be subject to final approval of the City, in the sole discretion of the City.

SECTION 12. BID AWARD: If an award of a Contract is made, it will be made to the lowest responsive and responsible Bidder and notice of the award or the intent to award will be made by posting a notice of such award or announcement on the Awarded Bids Tab on the Purchasing Division web page at www.roanokeva.gov/purchasing and in the foyer area of the 2nd Floor of the Noel C. Taylor Municipal Building at 215 Church Avenue, S.W., Roanoke, Virginia 24011.

SECTION 13. FAITH BASED ORGANIZATIONS: Pursuant to Virginia Code Section 2.2-4343.1, be advised that the City does not discriminate against faith-based organizations.

SECTION 14. HOLD HARMLESS AND INDEMNITY: Successful Bidder shall indemnify and hold harmless the City and its officers, agents, and employees against any and all liability, losses, damages, claims, causes of action, suits of any nature, costs, and expenses, including reasonable attorney's fees, resulting from or arising out of Successful Bidder's or its employees, agents, or subcontractors actions, activities, or omissions, negligent or otherwise, on or near City's property or arising in any way out of or resulting from any of the work or items to be provided under the Contract, and this includes, without limitation, any fines or penalties, violations of federal, state, or local laws or regulations, personal injury, wrongful death, or property damage claims or suits. Successful Bidder agrees to and shall protect, indemnify, and hold harmless all the parties referred to above from any and all demands for fees, claims, suits, actions, causes of action, settlement or judgments based on the alleged or actual infringement or violation of any copyright, trademark, patent, invention, article, arrangement, or other apparatus that may be used in the performance of the Contract.

SECTION 15. PROTESTS: Any Bidder who wishes to protest or object to any award made or other decisions Pursuant to this ITB may do so only in accordance with the provisions of Sections 2.2-4357, 4358, 4359, 4360, 4363, and 4364 of the Code of Virginia, and only if such is provided for in such Code section. Any such protest or objection must be in writing signed by a representative of the entity making the protest or objection and contain the information required by the applicable Code Sections set forth above. Such writing must be delivered to the City Purchasing Manager within the required time period.

SECTION 16. NOT USED.

SECTION 17. INFORMATION ON CONTRACT/PURCHASE ORDER TO BE AWARDED:

The Sample Contract marked as Attachment C to ITB No. 16-05-02 contains terms and conditions that the City plans to include in any contract/purchase order that may be awarded, but such terms and conditions may be added to, deleted, or modified as may be agreed to between the City and the Successful Bidder. However, if a Bidder has any objections to any of the terms or conditions set forth in the Sample or any changes or additions thereto that the Bidder wants to discuss before submitting a bid, the Bidder should set forth such objections, changes, or additions in written correspondence to the Purchasing Division at least five (5) days before the bid opening date for this ITB. Otherwise, submission of a bid by a Bidder will obligate such Bidder, if it is the Successful Bidder, to enter into a contract/purchase order containing the same or substantially similar terms and conditions as contained in such Attachment, and to comply with such terms and conditions. Also, such terms and conditions, together with the requirements of this ITB, shall be deemed to be a part of any resultant Contract/Purchase Order that may be issued by the City to the Successful Bidder.

END.

**ATTACHMENT A
TO
ITB #16-05-02**

SPECIFICATIONS AND PLAN DRAWINGS

Section 03100

Incidental Concrete

1. General

1.1. Section includes the requirements for proper installation of

- 1.1.1. Curb and gutter
- 1.1.2. Concrete Sidewalk and Handicap Ramps

1.2. Related Sections

- 1.2.1. Section 02750 -Shoulder Restoration for Curb and Sidewalk

1.3. References (latest Edition and Errata)

- 1.3.1. ACI 304R -Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International.
- 1.3.2. ACI 308 -Standard Practice for Curing Concrete; American Concrete Institute International.
- 1.3.3. ASTM A 185 -Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- 1.3.4. ASTM A 615 -Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- 1.3.5. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbs/ft³), Standard Proctor.
- 1.3.6. VDOT RBS – Virginia Department of Transportation - Road and Bridge Standards and Specifications.

1.4. Quality Assurance

- 1.4.1. Specified concrete strengths shall be obtained at the 28-day break. Averaging, as defined by ACI or ASTM methodologies, of compression break results shall not be permitted. The City reserves the right to test any portion of the concrete work.
- 1.4.2. Any concrete represented by a test which indicates a strength which is less than the specified 28-day compressive strength will be rejected and shall be removed and replaced with acceptable concrete at no expense to the City. Such rejection shall prevail unless the Contractor, at his expense, obtains and submits evidence acceptable to the City Engineer that the strength and quality of the reject is acceptable. If such evidence consists of cores taken from the work, the cores shall be obtained and tested in accordance with the standard methods of ASTM C42.

1.5. Submittals

1.5.1. Concrete mix design

2. Products

2.1. Reinforcement

2.1.1. Welded wire fabric for sidewalks - ASTM A185 - Wire Gage: 6 x 6 – W1.4 x W1.4.

2.1.2. Reinforcing bars shall conform to the requirements of ASTM A615 and VDOT Road and Bridge Specifications Section 223, Grade 60.

2.1.2.1. Expansion Joint Steel Dowels - Smooth wall, plain steel reinforcing with expansion cap and chair – 1/2" diameter @ 18" long, Grade 60

2.2. Concrete

2.2.1. For curbs, gutters, and sidewalks: Concrete shall be Class A3 (3,000 psi) General conforming to VDOT RBS, Section 217.

2.3. Concrete Accessories

2.3.1. Curing Compound: Curing Compound shall be 1100-CLEAR series conforming to ASTM C 309, Type I, Classes A & B.

2.3.2. Neenah Foundry Detectable Warning Plates (2'x2') for handicap ramps, Color = Brick Red. Each handicap ramp shall have two plates for a combined 4'x2' warning surface or one plate with a 4'x2' warning surface.

2.4. Joint Material

2.4.1. Isolation Joint Filler: Joint filler conforming to ASTM D 1751.

2.4.2. Expansion Joint Filler:

2.4.2.1. Preformed asphalt joint filler conforming to AASHTO M213.

2.4.2.2. Sponge rubber joint filler conforming to AASHTO M153, Type I.

2.4.2.3. Or approve equal.

2.5. Bedding - VDOT No. 21A Aggregate in accordance with VDOT RBS, Section 208.

2.5.1. Contractor shall not substitute VDOT No. 25 and 26 aggregate in lieu of VDOT 21A.

3. Execution

3.1. Preparation

- 3.1.1. Sawcut edges of existing pavement or curb.
- 3.1.2. If curb and gutter is being added to existing pavement, sawcut pavement 12" from the proposed edge of curb and gutter. The 12" gap shall allow space for proper installation of concrete and re-compaction.
- 3.1.3. Verify that compacted subgrade is dry and ready to support concrete placement.
- 3.1.4. Verify lines, levels, and dimensions before proceeding with work of this section.

- 3.2. Placing Concrete – Mixed concrete shall be discharged within 1 and 1/2 hours or before the mixer drum has revolved 300 revolutions, whichever comes first after the introduction of the mixing water to the cement and aggregates. When the concrete temperature exceeds 85 degrees F, the time shall be reduced to 45 minutes. Concrete shall be placed within 15 minutes after it has been discharged from the transporting unit. Concrete shall be handled from the mixer or transporting unit to forms in a continuous manner until the approved unit of operation is completed. Placing shall not be permitted when the sun, heat, wind, or limitations of facilities furnished by the Contractor prevent proper consolidation, finishing and curing. Sufficient placing capacity shall be provided so that concrete can be kept free of cold joints.

- 3.3. Depositing Concrete – Concrete shall be deposited as close as possible to its final position in the forms, and there shall be no vertical drop greater than 5 feet except where suitable equipment, as approved by the City project manager, is provided to prevent segregation.

3.4. Construction

- 3.4.1. Construct curb and gutter, entrances, sidewalk, handicap ramps and concrete lined ditches where shown on plans and in accordance with City of Roanoke specifications and plan details. CG-2 curbs shall be constructed to a depth of 18 inches. CG-6 curbs shall be constructed to a depth of 13 inches.
- 3.4.2. Construct and compact a 4" aggregate base of VDOT 21A under all concrete work associated with this Section. Remove soft or yielding areas and backfill with VDOT 21A aggregate. All aggregate base shall be compacted to at least ninety-five (95) percent of the material's maximum dry density as determined by ASTM D698, Standard Proctor.
- 3.4.3. Install forms in straight lines or smooth curves as shown on the plans.

3.5. Curb and Gutter

- 3.5.1. Concrete curb and gutter shall be formed in accordance with Section 502 of the VDOT RBS on the grades indicated on the Plans.
- 3.5.2. Forms for curb and gutter shall be steel and in good condition.
- 3.5.3. Joints for Curb and Gutter
 - 3.5.3.1. Construct contraction joints (1/2" deep by 1/8" wide) for crack control at approximate ten (10') foot intervals.
 - 3.5.3.2. Construct expansion joints at approximate 50 foot intervals, points of curvature, all radii points at concrete entrances and curb returns and at any drainage structure (i.e. curb inlets or drop inlets), and any other above grade utility structure. Expansion joints shall extend through the concrete with the void filled with one half (1/2) inch joint filler. Welded wire fabric shall not be constructed through an expansion joint.
 - 3.5.3.3. Construct expansion joints where new concrete work is constructed next to existing concrete work, "cold joints", or when time elapsing consecutive concrete placement exceeds 60 minutes.
 - 3.5.3.4. Trim joint filler at expansion joints to provide room for sealant. Apply sealant to expansion joints per manufacturer's recommendations.
- 3.5.4. Curb and gutter shall not require steel reinforcement.
- 3.5.5. When replacing or connecting to the **old** City of Roanoke Standard 7" curb, the Contractor shall transition from the new curb height of 6" to the 7" curb over a span of 10'. However, if the length of the new curb is less than 100', the Contractor shall match the existing 7" curb for the entire construction.
- 3.5.6. When the new curb does not connect to an existing curb, the Contractor shall taper the curb height above pavement down to 0" over a span of two feet.

3.6. Concrete Sidewalk

- 3.6.1. Sidewalk shall be constructed in accordance with City of Roanoke Standards. In addition, sidewalks shall be a minimum of 5 feet wide, 4 inches thick and reinforced with welded wire fabric.
 - 3.6.1.1. For large obstructions, the Contractor may narrow the sidewalk to 3' minimum with City project manager's approval.
 - 3.6.1.2. Sidewalks crossing driveway entrances shall be constructed 7 inches thick.

3.6.2. Unless shown on the plans, all sidewalks shall maintain a ¼ inch per foot transverse slope.

3.6.3. Forms for sidewalk shall be steel and in good condition.

3.6.4. Joints for Concrete Sidewalk

3.6.4.1. Construct contraction joints (1/8" wide by 1/2" deep) for crack control at approximate five (5) foot intervals unless plans specify otherwise.

3.6.4.2. Where slabs are more than seven (7) feet in width, contraction joints shall be formed longitudinally to obtain uniform blocks.

3.6.4.3. Expansion joints shall be constructed at intervals of approximately 50 feet. Slabs shall be separated by transverse preformed joint filler, ½ inch in thickness that extends from the bottom of the slab to top surface.

3.6.4.4. Steel dowels with expansion cap shall be used, 3'-0" on center, to connect slabs that are separated by expansion joints. Minimum of 2 dowels per expansion joint.

3.6.4.5. Expansion joints shall be used to separate sidewalk slabs and curb.

3.6.4.6. Apply sealant to expansion joints per manufacturer's recommendations.

3.7. Concrete Handicap Ramps

3.7.1. ADA compliant handicap ramps shall be constructed at all street intersections and at other major points of pedestrian crossing. Each ramp shall have a detectable warning surface at least 2' long x 4' wide (2 Neenah plates, powder coated Brick Red). Pressing or forming the detectable warning surface in the concrete shall not be allowed.

3.8. Placing Concrete

3.8.1. Place concrete in accordance with ACI 304R.

3.8.2. Install joint devices in accordance with manufacturer's instructions.

3.8.3. Place concrete continuously between predetermined expansion, control, and construction joints. No concrete shall be poured when the outside temperature is 40 degrees and falling.

3.8.4. Cold weather curing shall be utilized when the temperature, as placed and maintained, is 55 degrees to 40 degrees. No additional compensation shall be

made for cold weather curing. The protection period for cold weather curing is 72 hours. See attached ACI Table for more detail.

ACI Table

Minimum Concrete Temperature as Placed and Maintained	Section Size, Minimum Dimension			
	< 12 inches	12-36 inches	36-72 inches	> 72 inches
	55°F	50°F	45°F	40°F

3.8.4.1. Routine cold weather curing shall include heating blankets. Calcium chloride admixture, conforming to AASHTO designation M144, type 2, shall not be used in any concrete reinforced with bars or welded wire fabric.

3.8.4.2. In addition, Contractor's may use, at the Contractor's expense, lower water/cementitious material ratios (additional cement), a non-chloride accelerating admixture, or a Type III cement (high-early) to reduce the protection period. Protection period reductions shall be agreed upon by the City Project Manager. The use of fly ash in cold weather concrete placement is prohibited.

3.8.5. Hot weather curing shall be utilized when the temperature, as placed or maintained, is 80 degrees or above. No additional compensation shall be made for hot weather curing. The protection period for hot weather curing is 72 hours.

3.8.5.1. Routine hot weather curing measures shall include cooling forms/tarps and wetting subgrade in addition to other measures.

3.8.6. Concrete shall be placed in the forms in such a manner as to prevent the segregation of the mortar and the aggregate. The concrete shall be spaded, tamped, or vibrated sufficiently to bring the mortar to the surface. Concrete shall not be dropped a distance of more than 5 feet.

3.9. Concrete Finishing

3.9.1. Concrete surfaces shall be worked and dressed with a consistent "broom" finish.

3.9.2. Edges shall be tooled to produce a rounded edge with approximate one eighth (1/8) inch radius.

3.9.3. The Contractor shall apply a "light broom finish" perpendicular to the street for all sidewalks.

3.9.4. The Contractor shall apply a "light broom finish" parallel to the flow line for all curbs, gutters, and channels.

3.9.5. The Contractor shall apply a “coarse broom finish” parallel to the street for all entrances.

3.10. Curing and Protection

3.10.1. Comply with requirements of ACI 308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

3.10.2. Curing compound shall be applied at the rate of one (1) gallon per one hundred fifty (150) square feet to concrete surfaces for curing.

3.11. Field Quality Control

3.11.1. All exposed concrete shall be air entrained with air content conforming to the requirements of Table II-17, Section 217 of the VDOT RBS.

3.11.2. Concrete slump shall be between 1 and 5 inches.

3.11.3. Surfaces of concrete shall be true to line and grade. Surfaces shall not vary more than one quarter (1/4) inch per foot in five (5) feet, except where otherwise indicated.

3.11.4. All expansion joints shall be sealed.

3.11.5. Gutter pans shall have 2” drop to the front of the curb in accordance with VDOT standards. Drops less than 2” or flat gutter pans shall not be accepted.

3.11.6. The existing pavement shall not be used as a front form for curb and gutter construction.

3.12. Protection of Concrete

3.12.1. Protect new concrete sidewalks from pedestrian traffic for a minimum of 24 hours. Erect and maintain warning signs and lights to protect and direct pedestrian traffic.

3.12.2. Protect curb and gutter from vehicular traffic for a minimum of 7 days. Erect and maintain warning signs and lights to direct traffic as needed.

3.12.3. Protect entrances for a minimum of 7 days due to high early strength. Erect and maintain warning signs and lights to direct traffic as needed.

3.13. Defective Concrete

3.13.1. Any defective concrete shall be removed and replaced at the contractor's expense.

End of Section

Section 03290

Structural Concrete Reinforcement

1. General

- 1.1. Section includes the requirements for proper installation of double box culvert concrete reinforcement.
- 1.2. Related Sections
 - 1.2.1. Section 03300 – Cast-In-Place Structural Concrete
- 1.3. References (latest Edition and Errata)
 - 1.3.1. ACI 318 – Building Code Requirements for Structural Concrete and Commentary.
 - 1.3.2. CRSI MSP-1 – Concrete Reinforcing Steel Institute - Manual of Standard Practice.
 - 1.3.3. VDOT RBS – Virginia Department of Transportation - Road and Bridge Standards and Specifications.
- 1.4. References – Steel Bars
 - 1.4.1. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- 1.5. Quality Assurance – As required in this specification.
- 1.6. Submittals
 - 1.6.1. Reinforcement Shop Drawings – Detail drawings showing reinforcement steel placement, schedules, sizes, grades, and splicing and bending details. Drawings shall show support details including types, sizes, and spacing.

2. Products - All products and materials shall be new and in first class condition.

- 2.1. Reinforcing Steel Bars – All reinforcement shall be deformed bars unless otherwise noted on drawings. The use of plain bars shall not be permitted unless shown on the drawings.
 - 2.1.1. Reinforcing steel shall conform to ASTM A615 - Grade 60.
- 2.2. Reinforcing Wire Ties - Wire ties shall be 16 gage or heavier black annealed steel wire. If reinforcing bars are epoxy coated then ties shall be epoxy coated.

- 2.3. Supports - Supports shall be designed and fabricated in accordance with CRSI-MSP-1 and shall be steel or precast concrete blocks. Precast concrete blocks shall have wire ties and shall not be less than 4 inches square when supporting reinforcement on the ground. Precast concrete block shall have a compressive strength equal to that of the surrounding concrete. Where concrete formed surfaces will be exposed to weather or where surfaces are to be painted, steel supports within 1/2 inch of concrete surface shall be galvanized, plastic protected or of stainless steel. Concrete supports used in concrete exposed to view shall have the same color and texture as the finish surface. For slabs on grade, supports shall be precast concrete blocks, plastic coated steel fabricated with bearing plates, or specifically designed wire-fabric supports fabricated of plastic.

3. Execution

- 3.1. Reinforcement - Reinforcement shall be fabricated to shapes and dimensions shown and shall conform to the requirements of ACI 318. Reinforcement shall be cold bent unless otherwise authorized. Bending may be accomplished in the field or at the mill. Bars shall not be bent after embedment in concrete. Safety caps shall be placed on all exposed ends of vertical concrete reinforcement bars that pose a danger to life safety. Wire ties shall face away from the forms.
- 3.2. Placement – reinforcement shall be free from loose rust and scale, dirt, oil, or other deleterious coating that could reduce bond with the concrete. Reinforcement shall be placed in accordance with ACI 318 at locations shown plus or minus one bar diameter. Reinforcement shall not be continuous through expansion joints and shall be as indicated through construction or contraction joints. Concrete coverage shall be as indicated or as required by ACI 318. If bars are moved more than one bar diameter to avoid interference with other reinforcement, conduits or embedded items, the resulting arrangement of bars, including additional bars to meet structural requirements shall be approved before concrete is placed.
- 3.3. Splicing – Splices of reinforcement shall conform to ACI 318 and shall be made only as required or indicated. Splicing shall be by lapping. Lapped bars shall be placed in contact and securely tied or spaced transversely apart to permit the embedment of entire surface of each bar in concrete. Lapped bars shall not be spaced farther apart than one-fifth the required length of lap or 6 inches.

End of Section

Section 03300

Cast-In-Place Concrete

1. General

1.1. Section includes the requirements for cast-in-place concrete. This section applies to construction of double box culvert.

1.2. Related Sections

1.2.1. Section 03290 – Concrete Reinforcement

1.3. References (latest Edition and Errata)

- 1.3.1. ACI 117 – Standard Tolerances for Concrete Construction and Materials.
- 1.3.2. ACI 214.3R – Simplified Version of the Recommended Practice for Evaluation of Strength Test Results of Concrete.
- 1.3.3. ACI 305R – Hot Weather Concreting.
- 1.3.4. ASTM C 1077 – Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria For Laboratory Evaluation.
- 1.3.5. ASTM C 143 – Slump of Hydraulic Cement Concrete.
- 1.3.6. ASTM C 171 – Sheet Materials for Curing Concrete.
- 1.3.7. ASTM C 172 – Sampling of Freshly Mixed Concrete.
- 1.3.8. ASTM C 173 – Air Content of Freshly Mixed Concrete.
- 1.3.9. ASTM C 309 – Liquid Member Forming Compounds for Curing Concrete
- 1.3.10. ASTM C31 – Making and Curing Concrete Test Specimens in the Field.
- 1.3.11. ASTM C39 – Compressive Strength of Cylindrical Concrete Specimens.
- 1.3.12. ASTM C42 – Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
- 1.3.13. ASTM C 494 – Chemical Admixtures for Concrete.
- 1.3.14. ASTM C 78 – Flexural Strength of Concrete (Using Simple Beam with Third Point Loading).
- 1.3.15. ASTM 94 – Ready Mix Concrete.
- 1.3.16. ASTM 940 – Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete for Laboratory.
- 1.3.17. ASTM D 75 – Sampling Aggregates.
- 1.3.18. COE (US Army Corp of Engineers) – Standard Test Method for Frequency and Amplitude of Vibrators for Concrete.
- 1.3.19. VDOT RBS – Virginia Department of Transportation - Road and Bridge Standards and Specifications.
- 1.3.20. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbs/ft³), Standard Proctor.

1.4. Quality Assurance

City of Roanoke, VA

03300-1

Cast-In-Place Structural Concrete

- 1.4.1. Except as otherwise specified herein, tolerances for concrete batching, mixture properties, and construction as well as definition of terms and application practices shall be in accordance with ACI 117. Level and grade tolerance measurements of slabs shall be made as soon as possible after finishing; when forms or shoring are used, the measurements shall be made prior to removal.

1.5. Submittals

- 1.5.1. Concrete Mix Design
- 1.5.2. Concrete retarder for hot weather concrete pours (if applicable)
- 1.5.3. Concrete accelerator for cold weather concrete pours (if applicable)
- 1.5.4. Concrete strength tests conforming to ASTM C 1077.

2. Products – All products and materials shall be new and in first class condition.

2.1. Structural Concrete

- 2.1.1. Concrete shall be Class A4 (4,000 psi) General conforming to VDOT RBS, Section 217.

2.2. Joint Material (for Expansion)

- 2.2.1. Preformed asphalt joint filler conforming to AASHTO M213.
- 2.2.2. Sponge rubber joint filler conforming to AASHTO M153, Type I.
- 2.2.3. Or approved equal.

3. Execution

3.1. Preparation for Placement

- 3.1.1. Foundations on Earth – Earth (subgrade, base, or sub base courses) surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice and standing or running water. Prior to placement of concrete, the foundation shall be well drained and shall be satisfactorily graded and uniformly compacted.
- 3.1.2. Foundations on Rock – Rock surfaces upon which concrete is to be placed shall be free from oil, standing or running water, ice, mud, drummy rock, coating, debris and loose, semidetached or unsound fragments. Joints in rock shall be cleaned to satisfactory depth, as determined by City Project Manager, and to firm rock on the sides. Immediately before the concrete is placed, rock surfaces shall be cleaned thoroughly by the use of air-water jets or sandblasting as specified below for Previously Placed Concrete. Rock surfaces shall be kept continuously moist for at least 24 hours immediately prior to placing concrete thereon. All horizontal and approximately horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar proportioned similar to that in the concrete mixture. Concrete shall be placed before mortar stiffens.

- 3.2. Concrete Production – Unless otherwise noted, concrete batching, mixing, and transport shall conform to VDOT RBS.
- 3.2.1. Concrete Mixers – Shall be capable of combining the materials into a uniform mixture and of discharging this mixture without segregation. The mixers shall not be charged in excess of the capacity recommended by the manufacturer. The mixers shall be operated at the drum or mixing blade speed designated by the manufacturer. The mixers shall be maintained in satisfactory operating condition, and the mixer drums shall be kept free of hardened concrete. Should any mixer at any time produce unsatisfactory results, its use shall be promptly discontinued until it is repaired.
- 3.2.2. Truck Mixers – Truck mixers, the mixing of concrete therein, and concrete uniformity shall conform to the requirements of ASTM C 94. A truck mixer may be used either for complete mixing (transit-mixed) or to finish the partial mixing done in a stationary mixer (shrink-mixed). Each truck shall be equipped with two counters from which it is possible to determine the number of revolutions at mixing speed and the number of revolution at agitating speed. Water shall not be added at the placing site unless specifically approved by the City Project Manager; and in no case shall it exceed the specified w/c. Any such water shall be injected at the base of the mixer, not at the discharge end.
- 3.3. Conveying Concrete at the Site – Concrete shall be conveyed from the mixer or transporting unit to forms as rapidly as possible and within the time interval specified by methods which shall prevent segregation or loss of ingredient using following equipment. Conveying equipment shall be cleaned before each placement.
- 3.3.1. Buckets – The interior hopper slope shall be not less than 58 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least 5 times the nominal maximum-size aggregate, and the area of the gate opening shall not be less than 2 square feet. The maximum dimension of the gate opening shall not be greater than twice minimum dimension. The bucket gates shall be essentially grout tight when closed and may be manually, pneumatically or hydraulically operated except that buckets larger than 2 cubic yards shall not be manually operated. The design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position.
- 3.3.2. Transfer Hoppers – Concrete may be charged into nonagitating hopper for transfer to other conveying devices. Transfer hoppers shall be capable of receiving concrete directly from delivery vehicles and shall have conical-shaped discharge features. The transfer hopper shall be equipped with a hydraulically operated gate and with a means of external vibration to effect complete discharge. Concrete shall not be held in nonagitating transfer hoppers more than 30 minutes.

- 3.3.3. Trucks – Truck mixers operating at agitating speed or truck agitator used for transporting plant-mixed concrete shall conform to the requirements of ASTM C 94. Nonagitating equipment shall be used only for transporting plant-mixed concrete over a smooth road and when the hauling time is less than 15 minutes. Bodies of nonagitating equipment shall be smooth, watertight, metal containers specifically designed to transport concrete, shaped with rounded corners to minimize segregation, and equipped with gates that permit positive control of the discharge of the concrete.
- 3.3.4. Chutes – When concrete can be placed directly from a truck mixer, agitator or nonagitating equipment, the chutes normally attached to this equipment by the manufacturer may be used. A discharge deflector shall be used when required by the City Project Manager.
- 3.3.5. Belt Conveyors – Belt conveyors shall be designed and operated to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredient or loss of mortar and shall be provided with positive means such as discharge baffle or hopper, for preventing segregation of the concrete at transfer point and point of placing. Belt conveyors shall be constructed such that the idler spacing shall not exceed 36 inches. The belt speed shall be a minimum of 300 per minute and a maximum of 750 feet per minute. If concrete is to be placed through installed horizontal or sloping reinforcing bars, the conveyor shall discharge concrete into pipe or elephant truck that is long enough to extend through reinforcing bars.
- 3.4. Placing Concrete – Mixed concrete shall be discharged within 1 and 1/2 hours or before the mixer drum has revolved 300 revolutions, whichever comes first after the introduction of the mixing water to the cement and aggregates. When the concrete temperature exceeds 85 degrees F, the time shall be reduced to 45 minutes. Concrete shall be placed within 15 minutes after it has been discharged from the transporting unit. Concrete shall be handled from the mixer or transporting unit to forms in a continuous manner until the approved unit of operation is completed. Adequate scaffolding, ramps, and walkways shall be provided so that personnel and equipment are not supported by in-place reinforcement. Placing shall not be permitted when the sun, heat, wind, or limitations of facilities furnished by the Contractor prevent proper consolidation, finishing and curing. Sufficient placing capacity shall be provided so that concrete can be kept free of cold joints.
- 3.5. Depositing Concrete – Concrete shall be deposited as close as possible to its final position in the forms, and there shall be no vertical drop greater than 5 feet except where suitable equipment, as approved by the City project manager, is provided to prevent segregation. Depositing of the concrete shall be so regulated that it will be effectively consolidate in horizontal layers not more than 12 inches thick, except that all slabs shall be placed in a single layer. Concrete to receive other construction shall be screeded to the proper level. Concrete shall be deposited continuously in one layer or in layers so that fresh concrete is deposited on in-place concrete that is still plastic.

Fresh concrete shall not be deposited on concrete that has hardened sufficiently to cause formation of seams or planes of weakness within the section. Concrete that has surface dried, partially hardened or contains foreign material shall not be used. When temporary spreaders are used in the forms, the spreaders shall be removed as their service becomes unnecessary. Concrete shall not be placed in slabs over columns and walls until concrete in columns and walls in-place at least two hours or until concrete begins to lose its plasticity. Concrete for beams, girder, brackets, column capitals, haunches, and drop panels shall be placed at the same time as concrete for adjoining slabs.

- 3.6. Placing Concrete in Congested Areas – Special care shall be used to ensure complete filling of the forms, elimination of all voids, and complete consolidation of the when placing concrete in areas congested with reinforcing bars, embedded items, waterstops and other tight spacing. An appropriate concrete mixture shall be used, and the nominal maximum size of aggregate (NMSA) shall meet the specified criteria when evaluated for the congested areas. Vibrators with heads of the size appropriate for the clearances available shall be used, and the consolidation operation shall be closely supervised to ensure complete and thorough consolidation at all points. Where necessary, splices of reinforcing shall be alternated to reduce congestions. Where two mats of closely spaced reinforcing are required, the bars in each mat shall be placed in matching alignment or staggered to reduce congestion. Reinforcing bars may be temporarily crowded to one side during concrete placement provided they are returned to exact required location before concrete placement and consolidation are completed.
- 3.7. Consolidation – Immediately after placing, each layer of concrete shall be consolidated by internal vibrators. The vibrators shall at all times be adequate in effectiveness and number to properly consolidate concrete. A spare vibrator shall be kept at the jobsite during all concrete placing operations. The vibrators shall have a frequency of not less than 10,000 vibrations per minute, an amplitude of at least 0.025 inch, and the head diameter shall be appropriate for the structural member and the concrete mixture being placed. Vibrators shall be inserted vertically at uniform spacing over the area of placement. The distance between insertions shall be approximately 1-1/2 times the radius of action of the vibrator so that the area being vibrated will overlap adjacent just-vibrated area by a reasonable amount. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding layer if there is such. Vibrator shall be held stationary until the concrete is consolidated and then vertically withdrawn slowly while operating. Vibrators shall not be used to move concrete within the forms. Excessive vibration of lightweight concrete resulting in segregation or flotation of coarse aggregate shall be prevented. Grate tampers (“jitterbugs”) shall not be used. Form vibrators shall not be used.
- 3.8. Hot Weather Requirements - When the ambient temperature during concrete installation, as placed and maintained, is expected to exceed 80 degrees F, the concrete shall be placed and finished with procedures previously submitted and as specified herein. The specified curing time for the project is 72 hours. The concrete temperature at the time of delivery to the forms shall not exceed the temperature shown in the table

below when measured in accordance with ASTM C1064/C1064M. Cooling of mixing water or aggregates or placing concrete in the cooler part of the day may be required to obtain adequate placing temperature. A retarder may be used, as approved, to facilitate placing and finishing. Concrete shall not be placed if ambient temperature exceeds 95 degrees F.

Maximum Allowable Concrete Placing Temperature

Relative Humidity, Percent, During Time of Concrete Placement	Maximum Allowable Concrete Temperature - Degrees
Greater than 60	90F
40 to 60	85F
Less than 40	80F

3.9. Cold Weather Requirements – Special protection measures, approved by City Project Manager, shall be used if freezing temperatures are anticipated before the expiration of the specified curing period. The specified curing period for this project is 72 hours. The ambient temperature of the air where the concrete is to be installed, as placed and maintained, and the temperature of surfaces to receive concrete shall be not less than 40 degrees F. The temperature of the concrete when placed shall not be less than 50 degrees F nor more than 75 degrees F. Heating of mixing water and aggregates will be required to regulate the concrete placing temperature. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Materials entering the mixer shall be free from ice, snow or frozen lumps. Salt, chemicals or other materials shall not be incorporated in the concrete to prevent freezing. Upon written approval from City Project Manager, an accelerating admixture conforming to ASTM C494, Type C or E or as specified in the VDOT specification may be used, provide it contains no calcium chloride. Calcium chloride shall not be used.

3.10. Prevention of Plastic Shrinkage Cracking – During hot weather with low humidity, and particularly with appreciable wind, as well as interior placements when space heaters produce low humidity, the Contractor shall be alert to the tendency for plastic shrinkage cracks to develop and shall institute measure to prevent this. Particular care shall be taken if plastic shrinkage cracking is potentially imminent and especially if it has developed during previous placement. Periods of high potential for plastic shrinkage cracking can be anticipated by use of Fig 2.1.5 of ACI 305R. In addition the concrete placement shall be further protected by erecting shades and windbreaks and by applying fog sprays of water, sprinkling, ponding or wet covering. Plastic shrinkage cracks that occur shall be filled by injection of epoxy resin as directed, after the concrete hardens. Plastic shrinkage cracks shall never be troweled over or filled with slurry.

3.11. Joints, Joint Material, and Waterstops – Supplied and installed in accordance with manufacturer's recommendation or VDOT RBS, whichever is more stringent. All expansion joints and waterstops shall require a sealant protection compound applied in accordance with manufacturer's recommendations.

3.12. Finishing Formed Surfaces – Forms, form materials, and form construction are specified in Section 03280 – Structural Concrete Formwork. Finishing of formed surfaces shall be as specified herein. Unless another type of architectural or special finish is specified, surfaces shall be left with the texture imparted by the forms except that defective surfaces shall be repaired. Unless painting of surfaces is required, uniform color of the concrete shall be maintained by use of only one mixture without changes in materials or portions for any structure or portion of structure that required a Class B finish. Except for major defects, as defined hereinafter, surface defects shall be repaired as specified herein within 24 hours after forms are removed. Repairs of the so-called “plaster type” shall not be permitted in any location. Tolerances of formed surfaces shall conform to the requirements of AC 117. These tolerances apply to the finished concrete surface, not to the forms themselves; forms shall be set true to line and grade. Form tie holes requiring repair and other defects whose depth is at least as great as their surface diameter shall be repaired as specified in paragraph Damp-Pack Mortar Repair. Defects whose surface diameter is great than their depth shall be repaired as specified in paragraph Repair of Major Defects. Repairs shall be finished flush with adjacent surfaces and with the same texture. The cement used for all repairs shall be a blend of job cement proportioned so that the final color after curing and aging shall be the same as the adjacent concrete. Concrete with excessive honeycomb, or other defects which affect the strength of the member, shall be rejected. Repairs shall be demonstrated to be acceptable and free from cracks or loose or drummy areas at the completion of the contract and, for Class B finishes, shall be inconspicuous. Repairs not meeting these requirements shall be rejected and shall be replaced at Contractor’s expense.

3.12.1. Class B finish is required on all concrete which will be exposed to view after all fill is placed. Fins, ravelings, and loose material shall be removed, all surface defects over ½ inch in diameter or more than ½ inch deep, shall be repaired and, except as otherwise indicated or as specified in 03280 Structural Concrete Formwork, holes left by removal of form ties shall be reamed and filled. Defects more than ½ inch in diameter shall be cut back to sound concrete, but in all cases at least 1 inch deep.

3.12.2. Class D finish is required for all surfaces which will not be exposed to view after all fill is placed. Fins, ravelings, and loose material shall be removed, except as otherwise indicated or as specified in Section 03280 Structural Concrete Formwork, holes left by removal of form ties shall be reamed and filled. Honeycomb and other defects more than ½ inch deep or more than 2 inches in diameter shall be repaired. Defects more than 2 inches in diameter shall be cut back to sound concrete, but in all cases at least 1 inch deep.

3.13. Repairs

3.13.1. Damp-Pack Mortar Repair – Form tie holes requiring repair and other defects whose depth is at least as great at their surface diameter but not over 4 inches shall

be repaired by damp-pack mortar method. Form tie holes shall be reamed and other similar defects shall be cut out to sound concrete. The void shall then be through cleaned, thoroughly wetted, brush-coated with a thin coat of neat cement grout and filled with mortar. Mortar shall be a stiff mix of 1 part Portland cement to 2 parts fine aggregate passing the No. 16 mesh sieve, and minimum amount of water. Only sufficient water shall be used to produce a mortar which, when used, will stick together on being molded into a ball by a slight pressure of the hands and will not exude water but leave the hands damp. Mortar shall be mixed and allowed to stand for 30 to 45 minutes before use with remixing performed immediately prior to use. Mortar shall be through tamped in place in thin layers using a hammer and hardwood block. Holes passing entirely through walls shall be completely filled from the inside face by forcing mortar through to the outside face. All holes shall be placed full. Damp-pack repairs shall be moist cured for at least 48 hours.

- 3.13.2. Repair of Major Defects – Major defects shall be considered to be those more than ½ inch deep or, for Class B finishes, more than ½ inch diameter and in diameter and, for Class D finishes, more than 2 inches in diameter. Also included are any defects of any kind whose depth is over 4 inches or whose surface diameter is greater than their depth. Major defects shall be repaired as specified below.

- 3.13.2.1. Surface Application of Mortar Repair – Defective concrete shall be removed, and removal shall extend into completely sound concrete. Approved equipment and procedures which will not cause cracking or microcracking of the sound concrete shall be used. If reinforcement is encountered, concrete shall be removed so as to expose the reinforcement for at least 2 inches on all sides. All such defective areas greater than 12 square inches shall be outlined by saw cuts at least 1 inch deep. Defective areas less than 12 square inches shall be outlined by a 1 inch deep cut with a core drill in lieu of sawing. All saw cuts shall be straight lines in a rectangular pattern in line with the formwork panels. After concrete removal, the surface shall be thoroughly cleaned by high pressure washing to remove all loose material. Surface shall be kept continually saturated for the first 12 of the 24 hours immediately before placing mortar and shall be damp but not wet at the time of commencing mortar placement. The Contractor, at their option, may use either hand-placed mortar or mortar placed with a mortar gun. If hand-placed mortar is used, the edges of the cut shall be perpendicular to the surface of the concrete. The prepared area shall be brush-coated with a thin coat of neat cement grout. The repair shall then be made using a stiff mortar, preshrunk by allowing the mixed mortar to stand for 30 to 45 minutes and then remixed, thoroughly tamped into place in thin layers. If hand-placed mortar is used, the Contractor shall test each repair area for drumminess by firm tapping with a hammer and shall inspect for cracks, both in the presence of the City Inspector, immediately before completion of the contract, and shall replace any showing drumminess or cracking. If mortar placed with a mortar

gun is used, the gun shall be a small compressed air-operated gun to which the mortar is slowing hand fed and which applies the mortar to the surface as a high-pressure stream, as approved. Repairs made using shotcrete equipment shall not be accepted. The mortar used shall be the same mortar as specified for damp-pack mortar repair. If gun-placed mortar is used, the edges of the cut shall be beveled toward the center at a slope of 1:1. All surface applied mortar repairs shall be continuously moist cured for at least 7 days. Moist curing shall consist of several layers of saturated burlap applied to the surface immediately after placement is complete and covered with polyethylene sheeting, all held closely in place by sheet of plywood or similar material rigidly braced against it. Burlap shall be kept continually wet.

3.13.2.2. Repair of Deep and Large Defects – Deep and large defects shall be those that are more than 6 inches deep and also have an average diameter at the surface more than 18 inches or those are otherwise so identified by the City Project Manager. Such defects shall be repaired as specified herein or directed, except that defects which affect the strength of the structure shall not be repaired and that portion of the structure shall be completely removed and replaced. Deep and large defects shall be repaired by procedures approved in advance including forming and placing special concrete using applied pressure during hardening. Preparation of the repair area shall be as specified for surface application of mortar. In addition, the top edge (surface) of the repair area shall be sloped at approximately 20 degrees from the horizontal, upward toward the side from which concrete will be placed. The special concrete shall be a concrete mixture with low water content and low slump, and shall be allowed to age 20 to 60 minutes before use. Concrete containing a specified expanding admixture may be used in lieu of the above mixture; the past portion of such concrete mixture shall be designed to have an expansion between 2.0 and 4.0 percent which testing in accordance with ASTM C940. A full width “chimney” shall be provided at the top of the form on the placing side to ensure filling to the top of the opening. A pressure cap shall be used on the concrete in the chimney with simultaneous tightening and revibrating the form during hardening to ensure a tight fit for the repair. The form shall be removed after 24 hours and immediately the chimney shall be carefully chipped away to avoid breaking concrete out of the repair; the surface of the repair shall be dressed as required. When, in the opinion of the City Project Manager, the damage is too extensive for repair as outlined above, the Contractor shall be required to replace the damaged section of the concrete at the Contractor’s expense.

3.14. Finishing Unformed Surfaces – The ambient temperature of spaces adjacent to unformed surfaces being finished and of the base on which concrete will be placed shall not be less than 50 degrees F. In hot weather all requirements of paragraphs Hot Weather Requirements and Prevention of Plastic Shrinkage Cracking shall be met. Unformed surfaces that are not to be covered by additional concrete or backfill shall

have a float finish, with additional finishing as specified below, and shall be true to the elevation shown on the Plans. Surfaces to receive additional concrete or backfill shall be brought to the elevation as shown on the Plans, properly consolidated, and left true and regular. Unless otherwise shown on the Plans, exterior surfaces shall be sloped for drainage, as directed. Where drains are provided, interior floor shall be evenly sloped to the drains. Joints shall be carefully made with a jointing or edging tools. The finished surface shall be protected from stains or abrasions. Grate tampers or “jitterbugs” shall not be used for any surfaces. The dusting of surfaces with dry cement or other material or addition of water during finish shall not be permitted. If bleed water is present prior to finishing, the excess water shall be carefully dragged off or removed by absorption with porous materials such as burlap. During finishing operations, extreme care shall be taken to prevent over finishing or working water into the surface; this can cause “crazing” (surface shrinkage cracks which appear after hardening) of the surface. Any slabs with surfaces which exhibit significant crazing shall be removed and replaced. During finish operations, surfaces shall be checked with a 10 foot straightedge, applied in both directions at regular intervals while concrete is still plastic, to detect high or low areas.

- 3.14.1. Rough Slab Finish – As a first finish operation for unformed surfaces and as final finish for slab to receive mortar setting beds, the surface shall receive a rough slab finish prepared as follows. Unexposed tops of footing shall receive only a rough slab finish. The concrete shall be uniformly placed across the slab areas, consolidated as previously specified, and then screeded with straightedge strikeoffs immediately after consolidation to bring the surface to the required finish level with no coarse aggregate visible. Side form and screed rails shall be provided, rightly supported, and set to exact line and grade. Allowable tolerances for finished surfaces apply to hardened concrete, not to forms or screed rails. Forms and screed rails shall be set true to line and grade. “Wet screeds” shall not be used.
- 3.14.2. Floated Finish – Slabs to receive more than a rough slab finish shall next be given a wood float finish. Unless otherwise noted and other horizontal surfaces which will be permanently exposed to view shall receive a float finish. The screeding shall be followed immediately by darbying or bull floating before bleeding water is present, to bring the surface to a true, even plane. Then, after concrete has stiffened so that it will withstand a man’s weight without imprint and the water sheen has disappeared, it shall be floated to a true and even plane free of ridges. Floating shall be performed by use of suitable hand floats or power driven equipment. Sufficient pressure shall be used on the floats to bring a film of moisture to the surface. Hand floats shall be made of wood, magnesium, or aluminum. Light concrete or concrete that exhibits stickiness shall be floated with magnesium float. Care shall be taken to prevent over-finishing or incorporating water into the surface.
- 3.14.3. Broomed Finish – Deck surfaces of bridges shall be given a broomed finish. After floating, the surface shall be lightly steel troweled, and then carefully scored

by pulling a coarse fiber push-type broom across the surface. Brooming shall be transverse to traffic. After the end of the curing period, the surface shall be vigorously broomed with a coarse fiber broom to remove all loose or semi-detached particles.

3.15. Curing and Protection

3.15.1. General – Concrete shall be cured by an approved method for the period of time given below:

Concrete with Type III cement = 3 days

All other concrete = 7 days

Immediately after placement, concrete shall be protected from premature drying, extremes in temperatures, rapid temperature change, mechanical injury and damage from rain and flowing water for the duration of the curing period. Air and forms in contact with concrete shall be maintained at a temperature above 50 degrees for the first 3 days and a temperature above 32 degrees for the remainder of the specified curing period. Exhaust fumes from combustion heating units shall be vented to the outside of the enclosure, and heater and ducts shall be placed and directed as not to cause areas of overheating and drying of concrete surfaces or to create fire hazards. Material and equipment needed for adequate curing and protection shall be available and at the site prior to placing concrete. No fire or excessive heat, including welding, shall be permitted near or in direct contact with the concrete at any time, Except as otherwise permitted by paragraph Membrane Forming Curing Compounds, moist curing shall be provide any areas to receive floor hardener, any paint or other applied coating, or to which other concrete is to be bonded. Concrete containing silica fume shall be initially cured by fog misting during finishing, followed immediately by continuous moist curing. Except for plastic coated burlap, impervious sheeting alone shall not be used curing.

3.15.2. Moist Curing – Concrete to be moist-cured shall be maintained continuously wet for the entire curing period, commencing immediately after finishing. If water or curing material used stain or discolor concrete surfaces which are to be permanent exposed, the concrete surfaces shall be cleaned as approved. When wooden forms are left in place during curing, they shall be kept wet at all times. If steel forms are used in hot weather, non supporting vertical forms shall be broke loose from the concrete soon after the concrete hardens and curing water continuously applied in this void. If the forms are removed before the end of the curing period, curing shall be carried out as on unformed surfaces, using suitable materials. Surfaces shall be cured by ponding, by continuous sprinkling, by continuously saturated burlap or cotton mats, or by continuously saturated plastic coated burlap. Burlap and mats shall be clean and free from any contamination and shall be complete saturated before being placed on the concrete. The

Contractor shall have an approved work system to ensure that moist curing is continuous 24 hours per day.

3.15.3. Membrane Forming Curing Compounds – Membrane forming curing compounds may be used on all concrete surfaces except for bridge deck surface which shall be moist cured. Membrane curing shall not be used on surfaces that are to receive any subsequent treatment depending on adhesion or bonding to the concrete, including surfaces to which a smooth finish is to be applied or other concrete to be bonded. However, a styrene acrylate or chlorinated rubber compound meeting ASTM C 209, Class B requirements, may be used for surfaces which are to be painted or are to receive waterproofing. The curing compound selected shall be compatible with any subsequent paint, rooting, waterproofing or flooring specified. Membrane curing compound shall not be used on surfaces that are maintained at curing temperatures with free steam. Curing compound shall be applied to formed surfaces immediately after the forms are removed and prior to any patching or surface treatment except the cleaning of loose sand, mortar, and debris from the surface. All surfaces shall be thoroughly moistened with water. Curing compound shall be applied to slab surfaces as soon as the bleeding water has disappeared, with the tops of joints being temporally sealed to prevent entry of compound and to prevent moisture loss during the curing period. The curing compound shall be applied in a two-coat continuous operation by approved motorized power-spraying equipment operating a minimum pressure of 75 psi, at a uniform cover of not more than 300 square feet per gallon for each coat, and the second coat shall be applied perpendicular to the first coat. Concrete surfaces which have been subjected to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage specified. Surfaces on which clear compound is used shall be shaded from direct rays of sun for the first 3 days. Surfaces coated with curing compound shall be kept free of foot and vehicular traffic and from other sources of abrasion and contamination during the curing period.

3.15.4. Impervious Sheeting – Except for plastic coated burlap, impervious sheeting alone shall not be used for curing. Impervious-sheet curing shall only be used on horizontal or nearly horizontal surfaces. Surfaces shall be thoroughly wetted and be completely covered with the sheeting. Sheeting shall be at least 18 inches wider than concrete surface to be covered. Covering shall be laid with light-colored side up. Covering shall be applied not less than 12 inches and securely weighted down or shall be lapped not less than 4 inches and taped to form a continuous cover with completely closed joints. The sheet shall be weighted to prevent displacement so that it remains in contact with the concrete during the specified length of curing. Coverings shall be folded down over exposed edges of slab and secured by approved means. Sheet shall be immediately repaired or replaced if tears or holes appear during the curing period. Impervious sheeting shall conform to ASTM C 171.

3.15.5. Cold Weather Curing and Protection – When the daily ambient temperature is less than 32 degrees F the temperature of the concrete shall be maintained above 40 degrees F for the first seven days after placing. During the period of protection removal, the air temperature adjacent to the concrete surfaces shall be controlled so that concrete near the surface shall not be subjected to a temperature differential of more than 25 degrees F as determined by suitable temperature measuring devices furnished by the Contractor, as required, and installed adjacent to the concrete surface and 2 inches inside the surface of the concrete. The installation of thermometers shall be made by the Contractor, as directed by the City Project Manager.

3.16. Field Quality Control

3.16.1. Concrete Testing – Contractor shall be responsible for all concrete testing and associated expenses. Contractor shall use a third party independent materials testing firm. Due to the structural requirement of the concrete, each batch of concrete shall be tested. All tests reports shall be submitted to the City Project Manager in accordance with Section 01350 - Submittals.

3.16.1.1. Strength Requirements – Compressive strength specimens (5 by 12 inch cylinders) shall be in accordance with ASTM C31 and ASTM C39.

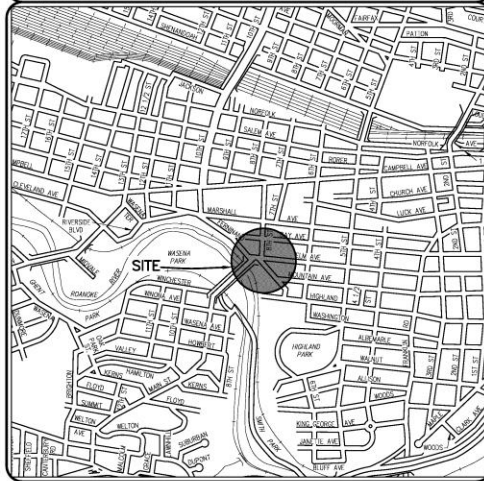
3.16.1.2. Air Entrainment Air content shall be as required in VDOT RBS or ASTM C173, whichever is more stringent.

3.16.1.3. Slump shall be as required in VDOT RBS or ASTM C143 whichever is more stringent.

3.16.1.4. Concrete Temperature – The temperature of the concrete shall not exceed 90 degrees F. When the ambient temperature during placement is 40 degrees F or less, or is expected to be at any time within 6 hours after placing, the temperature shall be between 55 and 75 degrees F.

End of Section

PROJECT LOCATION MAP



LINETYPES

	EXISTING	PROPOSED
PROPERTY BOUNDARY	---	---
CONTOUR	---998---	---
STORM DRAIN PIPE	SD SD	SD SD
GAS LINE	---	---
WATER LINE	W W	W W
SANITARY SEWER LINE	SAN SAN	SAN SAN

MATERIAL INVENTORY

1. DOGHOUSE MANHOLE STRUCTURE (EA)	- 1
2. VDOT CURB INLET (EA)	- 3
3. 15" RCP STORM PIPE (LF)	- 140
4. VDOT NO. 57 AGGREGATE (TON)	- 123
5. VDOT NO. 21A AGGREGATE (TON)	- 300
6. ASPHALT BASE MIX (TON)	- 8
7. ASPHALT SURFACE MIX (TON)	- 6
8. CURB/CURB AND GUTTER (LF)	- 60
9. CONCRETE SIDEWALK (SF)	- 870
10. COMMERCIAL ENTRANCE (EA)	- 2
11. RESIDENTIAL ENTRANCE (EA)	- 1

NOTE: THIS DOES NOT INCLUDE WORK RELATED TO ABANDONMENT OF EXISTING STORM DRAIN SYSTEM, CONNECTING EXISTING STORM DRAIN PIPE TO STRUCTURE - 102, CONCRETE ENCASMENT TO PROTECT SANITARY SEWER, AND SHOULDER RESTORATION TO ESTABLISH GRASS.



DEPARTMENT OF PUBLIC WORKS
STORMWATER DIVISION
1802 COURTLAND ROAD, NE
ROANOKE, VIRGINIA 24012
PHONE: (540) 853-5900
FAX: (540) 853-1270
WWW.ROANOKEVA.GOV/STORMWATER

PROJECT NAME

8TH STREET / ELM AVENUE
DRAINAGE PROJECT
(CITY RIGHT-OF-WAY)

CITY STORMWATER PLAN NUMBER: 5912

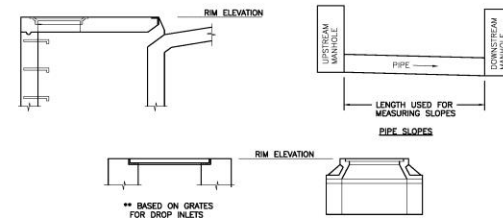
CONSTRUCTION NOTES:

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING AND IN THE ORDER PRIORITIZED:
1. CITY OF ROANOKE RIGHT OF WAY EXCAVATION AND RESTORATION STANDARDS, LATEST EDITION.
 2. VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS.

INDEX OF SHEETS

1. COVER SHEET AND GENERAL NOTES
2. PLAN AND PROFILE

CONSTRUCTION STAKEOUT FOR DRAINAGE STRUCTURES



STORM DRAIN UTILITY NOTES:

1. THE INSIDE DEPTH (DDP) OF THE MANHOLES, AS SHOWN/LABELLED ON THE PROFILES, IS BASED ON THE RM TOP ELEVATION TO THE LOWEST PIPE INVERT. DDP IS NOT THE TOTAL MANHOLE DEPTH. THE TOTAL MANHOLE DEPTH IS CALCULATED BY ADDING THE THICKNESS OF THE PIPE, GAP AROUND THE PIPE, AND THICKNESS OF THE BASE.
2. USE VDOT NO. 57 STONE AS PIPE BEDDING, BACKFILL, IN PAVEMENT, SIDEWALK AND CURB. SHALL BE VDOT NO. 21A. DO NOT BACKFILL TRENCH WITH EXISTING MATERIAL IN THE PAVEMENT.
3. ALL DRAINAGE STRUCTURES SHALL HAVE VDOT INLET SHAPING.
4. MANHOLES SHALL UTILIZE ECCENTRIC RISERS SO THAT ACCESS STEPS ALIGN.

PS TS MU PERMANENT SEEDING, TEMPORARY SEEDING, AND MULCHING

15 OCTOBER TO 1 FEBRUARY TURF-TYPE TALL FESCUE @ 10 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF	1 JUNE TO 1 SEPTEMBER TURF-TYPE TALL FESCUE @ 10 LB / 1000 SF GERMAN MILLET @ 1/2 LB / 1000 SF
1 FEBRUARY TO 1 JUNE TURF-TYPE TALL FESCUE @ 10 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	1 SEPTEMBER TO 15 OCTOBER TURF-TYPE TALL FESCUE @ 10 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF

38-0-0 @ 7 LB / 1000 SF

MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDING AREAS AND SHALL BE

APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION

AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED

SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING

SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN

THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK,

LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED

BY THE INSPECTOR.

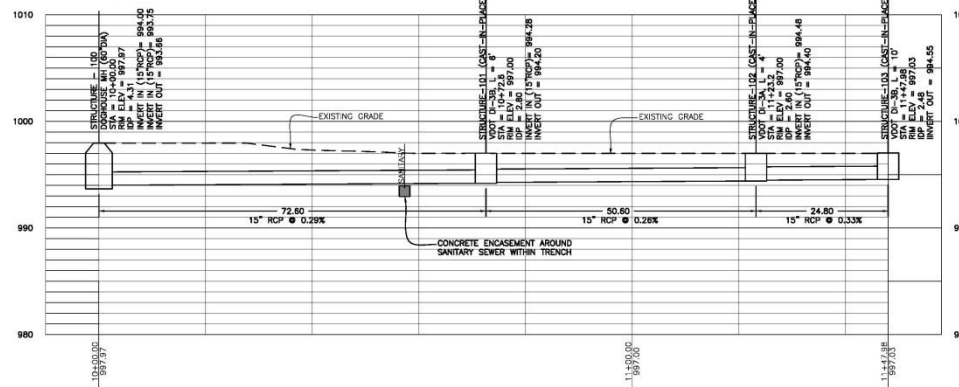
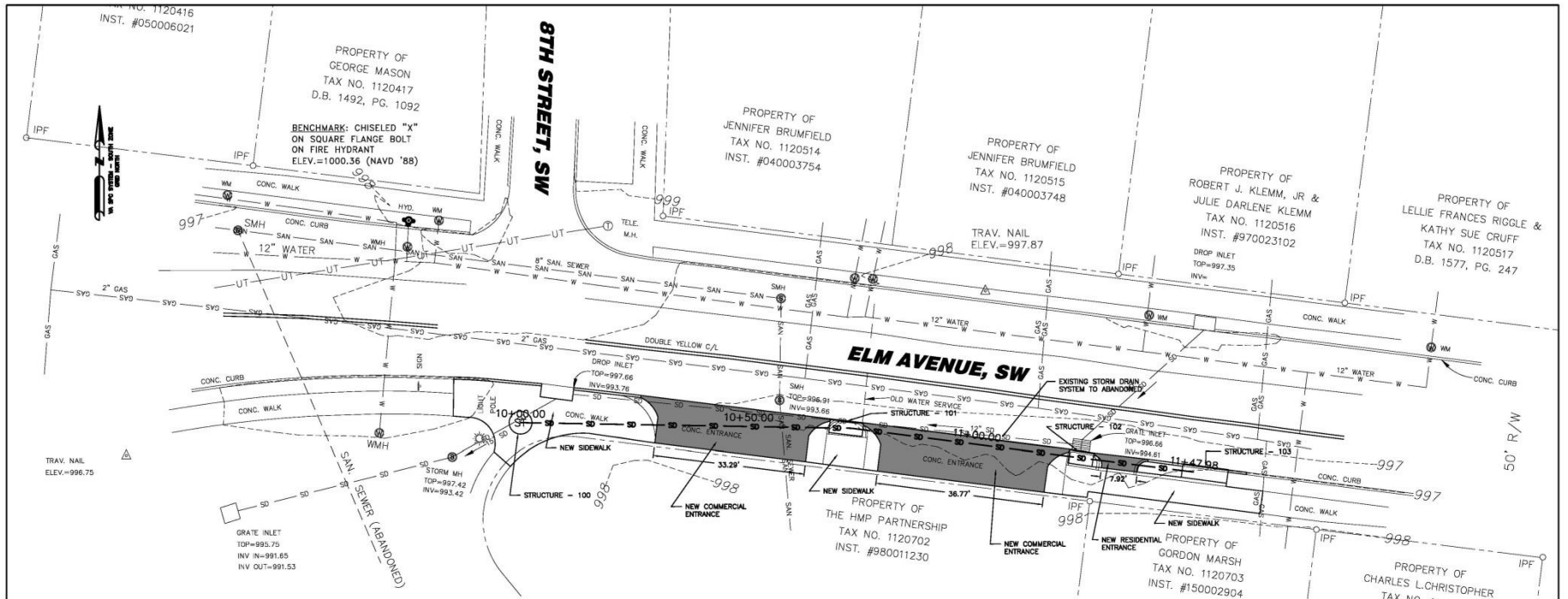
SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL,

CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FINABLE, SEEDBED.

MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

SHEET NUMBER: 1 OF 2

8TH STREET / ELM AVENUE DRAINAGE PROJECT



IF THIS DRAWING IS A REDUCTION
GRAPHIC SCALE MUST BE USED

VERT: 5' 0' 5'

HORIZ: 10' 0' 10'

SCALE 1" = 5'

SCALE 1" = 10'



DESIGNED: JJK
DRAWN: DAB/JJK
CHECKED: JJK

SEALS:

REV.	DATE	DESCRIPTION

DATE: 10/22/15
SCALE: AS SHOWN
24"x36" SHEET

8TH STREET / ELM AVENUE DRAINAGE PROJECT
PLAN AND PROFILE
CITY OF ROANOKE, VIRGINIA

SHEET 2 OF 2
PLAN NO. 5912

**ATTACHMENT B
TO
ITB #16-05-02**

BID FORM/SPECIFICATIONS

DESCRIPTION	LUMP SUM BID PRICE
PROVIDE AND INSTALL THREE (3) CAST IN PLACE DROP INLETS IN ACCORDANCE WITH THE ATTACHED SPECIFICATIONS AND PLAN DRAWINGS.	\$ _____

LUMP SUM PRICE SHALL INCLUDE ALL SHIPPING AND HANDLING CHARGES.

The City reserves the right to add, delete, or adjust quantities as deemed necessary by the City.

Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the bid, or irregularities of any kind, may be rejected by the City as being nonresponsive. No changes are to be made to the Bid Form. Any changes to a Bid Amount must be initialed by the person signing the Bid Form.

The attention of each Bidder is directed to VA Code sections 54.1-1100, et seq. which requires certain licenses for contractors, tradesmen, and others. Each Bidder is required to determine which license, if any, it is required to have under such sections. Complete the following:

Bidder ____ does have ____ does not have a Virginia Contractor's License. (Check appropriate block)
If Bidder has a Virginia Contractor's License, circle the class Bidder has and list the number.
Licensed "Class A", "Class B", or "Class C" Virginia Contractor Number _____

If Bidder has another type of Virginia License, please list the type and number:
Type of license _____ and number: _____.

Bidder is a __ resident or __ nonresident of Virginia. (Check appropriate blank. See VA Code Sections 54.1-1100, et seq.)

The attention of each Bidder is directed to Virginia Code Section 2.2-4311.2 which requires a bidder organized or authorized to transact business in the Commonwealth of Virginia pursuant to Title 13.1 or Title 50 of the Code of Virginia, as amended, or as otherwise required by law, shall include in its bid the Identification Number issued to such bidder by the Virginia State Corporation Commission (SCC). Furthermore, any bidder that is not required to be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid a statement describing why the bidder is not required to be so authorized. Please complete the following by checking the appropriate line that applies and providing the requested information:

Signature page required with submittal of bid

A. _____ Bidder is a Virginia business entity organized and authorized to transact business in Virginia by the SCC and such bidder's/offeror's Identification Number issued to it by the SCC is _____.

- B._____ Bidder is an out-of-state (foreign) business entity that is authorized to transact business in Virginia by the SCC and such bidder's Identification Number issued to it by the SCC is _____.
- C._____ Bidder does not have an Identification Number issued to it by the SCC and such bidder is not required to be authorized to transact business in Virginia by the SCC for the following reason(s):

Please attach additional sheets of paper if you need more space to explain why such bidder is not required to be authorized to transact business in Virginia.

The undersigned hereby agrees, if this Bid is accepted by the City, to provide the services and/or items in accordance with this Invitation for Bid and to execute a Contract for such services and/or items.

Legal Name of Bidder

Date

Authorized Signature

Print or Type Name and Title

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK



ATTACHMENT C TO
ITB#16-05-02

CITY OF ROANOKE, VIRGINIA
SAMPLE CONTRACT BETWEEN CITY OF ROANOKE AND

FOR _____

This Contract # _____ is dated _____, 20____, between the City of Roanoke, Virginia, a Virginia municipal corporation, hereinafter referred to as the "City" or "Owner", and

(legal name and address of contractor)

hereinafter referred to as the "Contractor," **{NOTE: Use one of the following if applicable.} {a _____ corporation.} {an Individual.} {a _____ Partnership.} {a _____ Limited Liability Company.}**

WITNESSETH:

WHEREAS, Contractor has been awarded this nonexclusive Contract by the City for furnishing all equipment, materials, goods, labor, and services necessary for _____ and associated work in accordance with this Contract and the documents referred to herein, all such items or services also being referred to hereinafter as the Work or Project.

NOW, THEREFORE, THE CITY AND THE CONTRACTOR AGREE AS FOLLOWS:

SECTION 1. WORK TO BE PERFORMED AND DOCUMENTS.

For and in consideration of the money hereinafter specified to be paid by the City to the Contractor for the Work provided for in this Contract to be performed by the Contractor, the Contractor hereby covenants and agrees with the City to fully perform the services, provide any materials called for to construct, and complete the Work called for by this Contract in a good and workmanlike manner in accordance with this Contract and the documents referred to herein in order to fully and properly complete this Contract within the time stipulated, time being made of the essence for this Contract. It is also agreed by the parties hereto that the documents to this Contract consist of this Contract and the following documents listed below (Contract Documents), all of which are and constitute a part of this Contract as if attached hereto or set out in full herein, viz:

1. Insurance Requirements (Exhibit 1).
2. Scope of Work (Exhibit 2).
3. List of Locations (Exhibit 3).
4. Bid Form Completed by Contractor and dated _____ (Exhibit 4). **(To be provided after selection of Successful Bidder.)**
5. City Special Terms and Conditions (Exhibit 5).
6. Invitation to Bid No. or Request for Proposal No. _____, which is incorporated herein by reference.

The parties agree that if there are any differences between the provisions of the above referenced documents, the provisions of the City documents and this Contract will control over any Contractor supplied documents or information.

SECTION 2. CONTRACT AMOUNT.

The City agrees to pay the Contractor for the Contractor's complete and satisfactory performance of the Work, in the manner and at the time set out in this Contract, but the total amount for all such requests will not exceed \$ _____, as provided for in this Contract and that this Contract amount may be increased or decreased by additions and/or reductions in the Work as may be authorized and approved by the City, and the Contract amount may be decreased by the City's assessment of any damages against the Contractor, as may be provided for in this Contractor or by law, and the City retains the right of setoff as to any amounts of money the Contractor may owe the City. However, Contractor further acknowledges and agrees that any request for Contractor to perform Work under this Contract is in the sole discretion of the City and that there is no guarantee of any minimum amount of Work that may be requested by the City and that no Work may be requested.

SECTION 3. TERM OF CONTRACT.

- A. The term of this Contract shall be for one (1) year, from _____, through _____, at which time it will terminate, unless sooner terminated pursuant to the terms of the Contract or by law or unless extended as set forth herein at the option of the City.
- B. By mutual agreement of the parties, the contract may be renewed for up to two (2) additional one (1) year periods of any combination thereof. If either party wants to renew the Contract that party shall give a written request to renew to the other party at least sixty (60) days before the expiration of the original term or any renewal term of the Contract. The party receiving such request shall either accept or reject in writing such request within thirty (30) days of receipt of that request, provided, however, if the party receiving the request to renew fails to respond within thirty (30) days, the request to renew shall be deemed to be rejected, unless the parties mutually agree otherwise.
- C. All terms and conditions shall remain in force for the term of this Contract and for any renewal period unless modified by mutual agreement of both parties. Prices shall not be increased during the initial term of this Contract.

SECTION 4. TIME OF PERFORMANCE.

The Contractor shall commence the Work to be performed under this Contract on such date as is established and fixed for such commencement by written notice (which may be initially given verbally in an emergency situation) to proceed given by the City representative to the Contractor, and the Contractor covenants and agrees to fully construct, perform, and complete the Work and/or provide the goods called for by this Contract established by such notice. The Contractor further agrees that the Work shall be started promptly upon receipt of such notice and shall be prosecuted regularly, diligently, and uninterruptedly at a rate of progress that will ensure full completion thereof in the shortest length of time consistent with the Contract Documents and that Contractor will cooperate and coordinate with the other City contractors or employees doing other work or using the area where Contractor is working.

SECTION 5. PAYMENT.

- A. The City and Contractor agree that the City will only pay the Contractor for time actually spent and materials actually provided on the Project requested and accepted by the City. The

payment requested shall be for the services completed and/or materials supplied for the Project, as specified in the Scope of Work (Exhibit 2) and as approved by the City's Parks and Recreation Urban Forester and/or Horticulturist. A written progress report detailing work completed, identified problems, and remaining work shall accompany each request for payment, together with sufficient documentation of all reimbursable expenses or costs.

- B. Also, sufficient documentation of all costs, expenses, materials supplied, and/or hours worked may be requested by the City and, if so, may be required prior to the processing of any such request for payment. Payment will only be made for work actually performed, services actually supplied, and/or materials or goods furnished to the City, all of which need to be approved and accepted by the City prior to such payment, unless otherwise provided for in the Contract documents. Invoices for work rendered and accepted shall be submitted by Contractor directly to the Streets and Traffic Division of the City's Transportation Department. Approval and payment of such invoices shall be the responsibility of the City's Streets and Traffic Superintendent or designee. Once a payment request has been received by the City, the City will process such payment request. If there are any objections or problems with the payment request, the City will notify the Contractor of such matters. If the payment request is approved and accepted by the City, payment will be made by the City to the Contractor not more than 30 days after such request has been approved.
- C. The services the Contractor may be requested to provide the City are those items set forth in Exhibit 2 (Scope of Work) and/or Exhibit 3 (Bid Form), which list of services may be amended by the mutual agreement of the parties. The prices to be paid to the Contractor for such services provided to and accepted by the City under the provisions of this Contract shall be the current price(s) as set forth in Exhibit 3 (Bid Form). Unless otherwise stated in this Contract, the price(s) shall include all applicable charges such as pick up, delivery, printing, packaging, shipping, and other charges.

SECTION 6. SALES TAX EXEMPTION.

The City is exempt from payment of State Sales and Use Tax on all tangible personal property purchased or leased for the City's use or consumption. The Virginia Sales and Use Tax Certificate of Exemption number is 217-074292-9.

SECTION 7. FREE ON BOARD, RISK OF LOSS, AND TITLE.

All prices include F.O.B Destination, inside delivery, unless otherwise noted in this Contract. The risk of loss from any casualty, regardless of cause, shall be on the Contractor until the items have been delivered to City personnel making the request and accepted by the City. The risk of loss shall also be on the Contractor during the return of any items to the Contractor. Title to the items shall pass to the City upon receipt and acceptance of such items by the City.

SECTION 8. INSPECTION.

The City shall have a reasonable time after receipt of items and before payment to inspect all items for conformity to this Contract. If all or some of the items delivered to the City do not fully conform to the provisions hereof, the City shall have the right to reject and return such nonconforming items, at the sole cost of the Contractor.

SECTION 9. WARRANTY OF MATERIAL AND WORKMANSHIP.

Contractor agrees that all items provided to the City will be new, or if an item is refurbished or remanufactured, such item will meet the industry standards for such item and the item shall be clearly labeled as refurbished or remanufactured, and that all such items include such warranties as may be provided by Virginia law together with any warranties provided by the manufacturer of the item. Contractor shall use reasonable commercial efforts to assist the City in processing warranty claims against a manufacturer. Contractor also agrees that the services provided under this Contract shall be completed in a professional, good and workmanlike manner, with the degree of skill and care that is required by like contractors in Virginia. Further, Contractor warrants that such services shall be completed in accordance with the applicable requirements of this Contract and shall be correct and appropriate for the purposes contemplated in this Contract. Contractor agrees that Contractor shall repair or replace, at Contractor's sole expense, and to the satisfaction of the City, any items, material, equipment, or part of the item that is found by the City to be defective or not in accordance with the terms of this Contract.

SECTION 10. PAYMENTS TO OTHERS BY CONTRACTOR.

The Contractor agrees that Contractor will comply with the requirements of Section 2.2-4354 of the Virginia Code regarding Contractor's payment to other entities and the Contractor will take one of the two actions permitted therein within 7 days after receipt of amounts paid to Contractor by the City. Contractor further agrees that the Contractor shall indemnify and hold the City harmless for any lawful claims resulting from the failure of the Contractor to make prompt payments to all persons supplying the Contractor equipment, labor, tools, or material in connection with the work provided for in the Contract. In the event of such claims, the City may, in the City's sole discretion, after providing written notice to the Contractor, withhold from any payment request or final payment the unpaid sum of money deemed sufficient to pay all appropriate claims and associated costs in connection with the Contract and make such payment, if the City determines it to be appropriate to do so.

SECTION 11. HOLD HARMLESS AND INDEMNITY.

Contractor shall indemnify and hold harmless the City and its officers, agents, and employees against any and all liability, losses, damages, claims, causes of action, suits of any nature, costs, and expenses, including reasonable attorney's fees, resulting from or arising out of Contractor's or its employees, agents, or subcontractors actions, activities, or omissions, negligent or otherwise, on or near City's property or arising in any way out of or resulting from any of the work or items to be provided under this Contract, and this includes, without limitation, any fines or penalties, violations of federal, state, or local laws or regulations, personal injury, wrongful death, or property damage claims or suits. Contractor agrees to and shall protect, indemnify, and hold harmless all the parties referred to above from any and all demands for fees, claims, suits, actions, causes of action, settlement or judgments based on the alleged or actual infringement or violation of any copyright, trademark, patent, invention, article, arrangement, or other apparatus that may be used in the performance of this Contract.

SECTION 12. COMPLIANCE WITH LAWS AND REGULATIONS, AND IMMIGRATION LAW.

Contractor agrees to and will comply with all applicable federal, state, and local laws, ordinances, and regulations, including, but not limited to all applicable licensing requirements, environmental regulations, and OSHA regulations. Contractor further agrees that Contractor does not and shall not during the performance of its Contract; knowingly employ an unauthorized alien as defined in the Federal Immigration Reform & Control Act of 1986.

SECTION 13. INDEPENDENT CONTRACTOR.

The relationship between Contractor and the City is a contractual relationship. It is not intended in any way to create a legal agency or employment relationship. Contractor shall, at all times, maintain its status as an independent contractor and both parties acknowledge that neither is an agent, partner or employee of the other for any purpose. Contractor shall be responsible for causing all required insurance, workers' compensation (regardless of number of employees) and unemployment insurance to be provided for all of its employees and subcontractors. Contractor will be responsible for all actions of any of its subcontractors, and that they are properly licensed.

SECTION 14. REPORTS, RECORDS, AND AUDIT.

Contractor agrees to maintain all books, records, electronic data, and other documents relating to this Contract for a period of five (5) years after the end of each fiscal year included in this Contract. The City, its authorized employees, agents, representatives, and/or state auditors shall have full access to and the right to request, examine, copy, and/or audit any such materials during the term of the Contract and such retention period, upon prior written notice to Contractor. This includes the City's right to audit and/or examine any of the Contractor's documents and/or data as the City deems appropriate to protect the City's interests.

SECTION 15. INSURANCE REQUIREMENTS.

Contractor and any of its subcontractors involved in this Contract shall maintain the insurance coverage's set forth in Exhibit 1 to this Contract and provide the proof of such insurance coverage as called for in Exhibit 1, including workers' compensation coverage regardless of the number of Contractor's employees. Such insurance coverage shall be obtained at the Contractor's sole expense and maintained during the life of the Contract and shall be effective prior to the beginning of any work or other performance by the Contractor under this Contract. Additional insured endorsements, if required, must be received by the City within 30 days of the execution of this Contract or as otherwise required by the City's Risk Manager.

SECTION 16. DEFAULT.

If Contractor fails or refuses to perform any of the terms of this Contract, including poor services, work or materials, the City may, by written notice to Contractor, terminate this Contract in whole or in part. In addition to any right to terminate, the City may enforce any remedy available at law or in equity in connection with such default, and Contractor shall be liable for any damages to the City resulting from Contractor's default. The City further reserves the right to immediately obtain such work or services from other entities in the event of Contractor's default.

SECTION 17. NONWAIVER.

Contractor agrees that the City's waiver or failure to enforce or require performance of any term or condition of this Contract or the City's waiver of any particular breach of this Contract by the Contractor extends to that instance only. Such waiver or failure is not and shall not be a waiver of any of the terms or conditions of this Contract or a waiver of any other breaches of the Contract by the Contractor and does not bar the City from requiring the Contractor to comply with all the terms and conditions of the Contract and does not bar the City from asserting any and all rights and/or remedies it has or might have against the Contractor under this Contract or by law.

SECTION 18. FORUM SELECTION AND CHOICE OF LAW.

This Contract shall be governed by, and construed in accordance with, the laws of the Commonwealth of Virginia, without application of Virginia's conflict of law provisions. Venue for any litigation, suits, and claims arising from or connected with this Contract shall only be proper in the Roanoke City Circuit Court, or in the Roanoke City General District Court if the amount in controversy is within the jurisdictional limit of such court, and all parties to this Contract voluntarily submit themselves to the jurisdiction and venue of such courts, regardless of the actual location of such parties. The provisions of this Contract shall not be construed in favor of or against either party, but shall be construed according to their fair meaning as if both parties jointly prepared this Contract.

SECTION 19. SEVERABILITY.

If any provision of this Contract, or the application of any provision hereof to a particular entity or circumstance, shall be held to be invalid or unenforceable by a court of competent jurisdiction, the remaining provisions of this Contract shall not be affected and all other terms and conditions of this Contract shall be valid and enforceable to the fullest extent permitted by law.

SECTION 20. NONDISCRIMINATION.

- A. During the performance of this Contract, Contractor agrees as follows:
- i. Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - ii. Contractor in all solicitations or advertisements for employees placed by or on behalf of Contractor will state that Contractor is an equal opportunity employer.
 - iii. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- B. Contractor will include the provisions of the foregoing Section A (i, ii, and iii) in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

SECTION 21. DRUG-FREE WORKPLACE.

- A. During the performance of this Contract, Contractor agrees to (i) provide a drug-free workplace for Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor maintains a drug-free workplace; and (iv) include the provisions of the

foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

- B. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

SECTION 22. FAITH BASED ORGANIZATIONS.

Pursuant to Virginia Code Section 2.2-4343.1, be advised that the City does not discriminate against faith-based organizations.

SECTION 23. ASSIGNMENT.

Contractor may not assign or transfer this Contract in whole or in part except with the prior written consent of the City, which consent shall not be unreasonably withheld. If consent to assign is given, no such assignment shall in any way release or relieve the Contractor from any of the covenants or undertakings contained in this Contract and the Contractor shall remain liable for the Contract during the entire term thereof.

SECTION 24. CONTRACTUAL DISPUTES.

Contractual claims, whether for money or for other relief, shall be submitted, in writing, no later than sixty (60) days after the earlier of the final payment or termination of the Contract or notice from the City to the Contractor that the City disputes the amount of Contractor's request for final payment. However, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. Such notice is a condition precedent to the assertion of any such claim by the Contractor. A written decision upon any such claims will be made by the City Manager or the City Manager's designee (hereafter City Manager) within thirty (30) days after submittal of the claim and any practically available additional supporting evidence required by the City Manager. The Contractor may not institute legal action prior to receipt of the City's decision on the claim unless the City Manager fails to render such decision within 120 days from submittal of Contractor's claim. The decision of the City Manager shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim or from expiration of the 120 day time limit, whichever occurs first, initiates legal action as provided in Section 2.2 - 4364, of the Va. Code. Failure of the City to render a decision within said 120 days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the City's failure to render a decision within said 120 days shall be Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to Section 2.2 - 4365 of the Va. Code has been established for contractual claims under this Contract.

SECTION 25. SUCCESSORS AND ASSIGNS.

The terms, conditions, provisions, and undertakings of this Contract shall be binding upon and inure to the benefit of each of the parties hereto and their respective successors and assigns.

SECTION 26. HEADINGS.

The captions and headings in this Contract are for convenience and reference purposes only and shall not affect in any way the meaning and interpretation of this Contract.

SECTION 27. COUNTERPART COPIES.

This Contract may be executed in any number of counterpart copies, each of which shall be deemed an original, but all of which together shall constitute a single instrument.

SECTION 28. AUTHORITY TO SIGN.

The persons who have executed this Contract represent and warrant that they are duly authorized to execute this Contract on behalf of the party for whom they are signing.

SECTION 29. NOTICES.

All notices must be given in writing and shall be validly given if sent by certified mail, return receipt requested, or by a nationally recognized overnight courier, with a receipt, addressed as follows (or any other address that the party to be notified may have designated to the sender by like notice):

To City:	City of Roanoke Department of General Services Transportation Division 1802 Courtland Avenue Roanoke, Virginia 24014
Facsimile:	(540) 853-6845
Copy to:	City of Roanoke Purchasing Division Attn: Purchasing Manager Noel C. Taylor Municipal Building, Room 202 215 Church Avenue, SW Roanoke, Virginia 24011
Facsimile:	(540) 853-1513
If to Contractor:	_____ Attn: _____, President/CEO _____ _____
Email Address:	_____
Phone:	_____

Notices shall be deemed to be effective one day after sending if sent by overnight courier or three (3) days after sending if by certified mail, return receipt requested.

SECTION 30. PROTECTING PERSONS AND PROPERTY.

The Contractor expressly undertakes both directly and through its subcontractors, to take every reasonable precaution at all times for the protection of all persons and property at the location of the Work or in the vicinity of the Work or that may be affected by the Contractor's operation in connection with the Work. The Contractor will maintain adequate protection of all Contractor's Work to prevent damage to it and shall protect the City's property from any injury or loss arising in connection with this Contract and to protect adjacent property to prevent any damage to it or loss of use and enjoyment by its owners. Contractor agrees to be responsible for the entire Work and will be liable for all damages to the Work, including, but not limited to, damages to any property of the City or to any property in the vicinity or adjacent to the Work. All damage with respect to the Work caused by vandalism, weather, or any other cause, other than resulting from the sole negligence of the City shall be the responsibility of the Contractor. Contractor shall also be responsible for any inventory shortages and discrepancies of any type.

SECTION 31. CONTRACT SUBJECT TO FUNDING.

This Contract is subject to funding and/or appropriations from federal, state, and/or local governments and/or agencies. If any such funding is not provided, withdrawn, or otherwise not made available for this Contract, the Contractor agrees that the City may terminate this Contract on seven (7) days written notice to Contractor, without any penalty or damages being incurred by the City. Contractor further agrees to comply with any applicable requirements of any grants and/or agreements providing such funding.

SECTION 32. SUSPENSION OR TERMINATION OF CONTRACT BY CITY.

The City, at any time, may order Contractor to immediately stop work on this Contract, and/or by seven days (7) written notice may terminate this Contract, with or without cause, in whole or in part, at any time. Upon receipt of such notice, the Contractor shall immediately discontinue all services affected (unless the notice directs otherwise), and deliver to the City all data (including electronic data), drawings, specifications, reports, project deliverables, estimates, summaries, and such other information and materials as may have been accumulated by the Contractor in performing this Contract whether completed or in process (unless otherwise directed by the notice).

1. If the termination or stop work order is due to the failure of the Contractor to fulfill any of its Contract obligations, the City may take over the Work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the City for any damages allowed by law, and upon demand of City shall promptly pay the same to City.
2. Should the Contract be terminated or work is stopped not due in any way to the fault of the Contractor, the Contractor shall only be entitled to compensation for services actually performed and materials actually supplied prior to notice of termination or to stop work and which are approved by the City and any applicable federal or state approving agency. No profit, overhead, or any other costs of any type are allowed after the date of such notice of termination or stop work order.
3. The rights and remedies of the City provided in this Section are in addition to any other rights and remedies provided by law or under this Contract and City may pursue any and all such rights and remedies against Contractor as it deems appropriate.

SECTION 33. ETHICS IN PUBLIC CONTRACTING.

The provisions, requirements, and prohibitions as contained in Sections 2.2-4367 through 2.2-4377, of the Va. Code, pertaining to bidders, offerors, contractors, and subcontractors are applicable to this Contract.

SECTION 34. COMPLIANCE WITH STATE LAW; FOREIGN AND DOMESTIC BUSINESSES AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VIRGINIA.

Contractor shall comply with the provisions of Virginia Code Section 2.2-4311.2, as amended, which provides that a contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law. Contractor shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the Contract. The City may void the Contract if the Contractor fails to remain in compliance with the provisions of this section.

SECTION 35. OWNERSHIP OF REPORTS AND DOCUMENTS.

Contractor agrees that all reports and any other documents (including electronic data) prepared for, obtained in connection with, and/or required to be produced in connection with this Contract shall be delivered by the Contractor to the City and all such items shall become the sole property of the City. The Contractor agrees that the City shall own all rights of any type in and to all such items, including but not limited to copyrights and trademarks, and the City may reproduce, copy, and use all such items as the City deems appropriate, without any restriction or limitation on their use and without any cost or charges to the City from Contractor. Contractor hereby transfers and assigns all such rights and items to the City. Contractor further agrees Contractor will take any action and execute any documents necessary to accomplish the provisions of this Section. The Contractor also warrants that Contractor has good title to all materials, equipment, documents, and supplies which it uses in the Work or for which it accepts payment in whole or in part.

SECTION 36. JOBSITE APPEARANCE.

The Contractor expressly undertakes, either directly or through its subcontractor(s), to clean up frequently all refuse, rubbish, scrap material, and debris caused by its operations, to the end that at all times the jobsite shall present a neat, orderly, and workmanlike appearance. No such refuse, rubbish, scrap material, and debris shall be left within the completed Work nor buried on site, but shall be properly protected and removed from the site and properly disposed of in a licensed landfill or otherwise as required by law or as otherwise required by the Contract.

SECTION 37. FINAL CLEANING.

The Contractor expressly undertakes, either directly or through its subcontractor(s), before final payment, to remove all surplus material, false work, temporary structures, and debris of every nature resulting from its operations and to put the site in a neat, orderly condition. If a Contractor fails to

clean up at the completion of the Project, the City may do so and charge for the costs thereof to the Contractor.

SECTION 38. PROTECTION ON SITE.

The Contractor expressly undertakes, both directly and through its subcontractor, to take every reasonable precaution at all times for the protection of all persons and property which may come on the jobsite or be affected by the Contractor's operation in connection with the Work.

SECTION 39. SAFETY AND HEALTH PRECAUTIONS.

The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety and health precautions and programs in connection with the Work, including but not limited to provision of appropriate sanitation facilities, if applicable.

SECTION 40. PROTECTING THE PUBLIC.

The Contractor shall in all cases protect the public and the Work, during its execution, by posting and maintaining, at its expense, appropriate signs, barricades, barriers, lights, flagmen, and other safety devices in accordance with the most current version of the "Virginia Work Area Protection Manual," published by Virginia Department of Transportation.

SECTION 41. PROTECTING THE WORK AND ADJACENT PROPERTY.

The Contractor shall continuously maintain adequate protection of all its work from damage and shall protect the City's property and the property where the work is being done from injury or loss arising in connection with this Contract. The Contractor shall adequately protect adjacent property to prevent any damage to it or its loss of use. Contractor shall provide and maintain all passageways, guard fences, lights, and other facilities for protection required by any public authority, local conditions, any of the Contract Documents, or erected for the fulfillment of its obligations for the protection of persons and property.

SECTION 42. EMERGENCIES.

In an emergency affecting the safety or life of persons or of the Work, or of the adjoining property, the Contractor, without special instruction or authorization from the City's project manager, City Engineer, Building Code Official, or Fire Official, shall act, at Contractor's discretion, to prevent such threatened loss or injury. Also, should Contractor, to prevent threatened loss or injury, be instructed or authorized to act by the City's project manager, City Engineer, Building Code Official, Fire Official, or other responsible official, Contractor shall so act immediately, without appeal.

SECTION 43. DAMAGE TO THE WORK.

The Contractor shall have charge of and be solely responsible for the entire Work and be liable for all damages to the Work including, but not limited to any property in the vicinity of the Work, until its completion and acceptance by the City.

SECTION 44. DAMAGE TO OTHER WORK OR UTILITIES.

The Contractor shall take into account all other work which shall be done by other parties on the jobsite, either now known or which may become necessary during the progress of the Work, and shall be responsible for any damage done to the other work. Should any utilities require adjustment during the Work, it shall be the Contractor's responsibility to have such utilities relocated as a part of the Work and to contact and cooperate with the respective Utility Company in performance of such operations. The respective Utility Company shall be given a minimum of forty-eight (48) hours notice prior to the adjustment, and the Contractor shall comply with the provisions of the Virginia Underground Utilities Damage Prevention Act, Section 56-265.14 et seq., of the Va. Code. Damages that may occur to the utilities during the Work shall be the sole responsibility of the Contractor.

SECTION 45. WEATHER DAMAGE OR DELAY.

Damage to the Work or any delays caused by the weather shall be the responsibility of the Contractor.

SECTION 46. DAMAGE TO EXISTING STRUCTURES.

Damage caused by Contractor or its subcontractors to concrete curbs, gutters, sidewalks, or any existing facility, structure, or building that may occur during the Work shall be repaired or replaced by the Contractor, at its sole expense, as directed by and to the satisfaction of the City.

SECTION 47. RELEASE BY CONTRACTOR.

The acceptance by the Contractor of the final payment shall be and does operate as a release by the Contractor of all claims by the Contractor against City and of all other liability of the City to the Contractor whatever, including liability for all things done or furnished in connection with the Work or the Contract.

SECTION 48. DEFECTIVE WORK.

The Contractor agrees it shall repair or replace, at Contractor's sole expense, and to the satisfaction of the City, any work, material, equipment, or part that is found, by the City, to be defective.

SECTION 49. ENTIRE CONTRACT.

This Contract, including any attachments, exhibits, and referenced documents, constitutes the complete understanding between the parties. This Contract may be modified only by written agreement properly executed by the parties.

SIGNATURE PAGE TO FOLLOW.

IN WITNESS WHEREOF, the parties hereto have signed this Contract by their authorized representatives.

WITNESS:

(Full Legal Name of Contractor)

_____ By _____

Printed Name and Title

Printed Name and Title

(SEAL)

CITY OF ROANOKE, VIRGINIA

WITNESS:

_____ By _____
City Manager or Authorized City Representative

Printed Name and Title

Printed Name and Title

Approved as to form:

Appropriation and Funds Required
for this Contract Certified:

City Attorney

Director of Finance

Approved as to Execution:

Account # _____

Date _____

City Attorney

**EXHIBIT 1
TO CONTRACT
BETWEEN CITY OF ROANOKE AND
FOR _____**

REFERENCE: ITB# 16-05-02

SAMPLE CONTRACTOR'S INSURANCE REQUIREMENTS

INSURANCE REQUIREMENTS SECTION

The Contractor shall comply with the insurance requirements set forth in the Contract, including the items set forth below:

- A. Neither the Contractor nor any subcontractor shall commence work under this Contract until the Contractor has obtained and provided proof of the required insurance coverages to the City, and such proof has been approved by the City. The Contractor confirms to the City that all subcontractors have provided Contractor with proof of such insurance, or will do so prior to commencing any work under this Contract.
- B. Contractor, including all subcontractors, shall, at its and/or their sole expense, obtain and maintain during the life of this Contract the insurance policies and/or coverages required by this section. The City and its officers, employees, agents, assigns, and volunteers shall be added as an additional insured to the general liability and automobile coverages of any such policies and such insurance coverages shall be primary and noncontributory to any insurance and/or self insurance such additional insureds may have. The Contractor shall immediately notify in writing the City of any changes, modifications, and/or termination of any insurance coverages and/or policies required by this Contract. The Contractor shall provide to the City with the signed Contract an Acord certificate of insurance which states in the description of operations section one of the two paragraphs below:
 - (1) The City and its officers, employees, agents, assigns, and volunteers are additional insureds as coverage under this policy includes ISO endorsement CG 20 33 which provides that the insured status of such entities is automatic if required by a contract or a written agreement. (If additional insured status is automatic under a different coverage form, Contractor must attach a copy of the coverage form to its certificate. Any required insurance policies shall be effective prior to the beginning of any work or other performance by Contractor and any subcontractors under this Contract).
 - OR
 - (2) ISO endorsement CG 20 10 will be issued, prior to the beginning of any work or other performance by Contractor under this Contract, to the City and its officers, employees, agents, assigns, and volunteers naming them as an additional insured under the general liability coverage. (A copy of the binder confirming the issuance must be attached to the certificate. Any required insurance policies shall be effective prior to the beginning of any work or other performance by Contractor and any subcontractors under this Contract).

However, if B (1) or (2) cannot be provided, the City's Risk Manager, in such Manager's sole discretion, may approve such other certificate of insurance or insurance document(s) that the Risk Manager deems acceptable. The City of Roanoke shall also be named as the Certificate Holder.

C. The minimum insurance policies and/or coverages that shall be provided by the Contractor, including its subcontractors, include the following:

(1) Commercial General Liability: \$1,000,000.00

\$1,000,000.00 General Aggregate Limit (other than Products/Completed Operations).

\$1,000,000.00 Products/Completed Operations Aggregate Limit.

\$1,000,000.00 Personal Injury Liability (including liability for slander, libel, and defamation of character).

\$1,000,000.00 each occurrence limit

(2) Automobile Liability: \$1,000,000.00 combined single limit

(3) Workers' Compensation and Employer's Liability:

Workers' Compensation: statutory coverage for Virginia

Employer's Liability:

\$100,000.00 Bodily Injury by Accident each occurrence

\$500,000.00 Bodily Injury by Disease Policy Limit.

\$100,000.00 Bodily Injury by Disease each employee.

(4) The required limits of insurance for this Contract may be achieved by combining underlying primary coverage with an umbrella liability coverage to apply in excess of the general and automobile liability policies, provided that such umbrella liability policy follows the form of the underlying primary coverage.

(5) Such insurance policies and/or coverages shall provide for coverage against any and all claims and demands made by a person or persons or any other entity for property damages or bodily or personal injury (including death) incurred in connection with the services, work, items, and/or other matters to be provided under this Contract with respect to the commercial general liability coverages and the automobile liability coverages. With respect to the workers' compensation coverage, Contractor's and its subcontractors' insurance company shall waive rights of subrogation against the City and its officers, employees, agents, assigns, and volunteers.

D. Proof of Insurance Coverage:

- (1) Contractor shall furnish the City with the above required certificates of insurance showing the type, amount, effective dates, and date of expiration of the policies.
 - (2) Where waiver of subrogation is required with respect to any policy of insurance required under this Section, such waiver shall be specified on the certificate of insurance.
- E. Insurance coverage shall be in a form and with an insurance company approved by the City, which approval shall not be unreasonably withheld. Any insurance company providing coverage under this Contract shall be authorized to do business in the Commonwealth of Virginia.
- F. The Contractor's insurance policies and/or coverages shall not contain any exclusions for the Contractor's subcontractors.
- G. The continued maintenance of the insurance policies and coverages required by the Contract is a continuing obligation, and the lapse and/or termination of any such policies or coverages without approved replacement policies and/or coverages being obtained shall be grounds for termination of the Contractor for default.
- H. Nothing contained in the insurance requirements is to be construed as limiting the liability of the Contractor, and/or its subcontractors, or their insurance carriers. The City does not in any way represent that the coverages or the limits of insurance specified are sufficient or adequate to protect the Contractor's interest or liabilities, but are merely minimums. The obligation of the Contractor, and its subcontractors, to purchase insurance shall not in any way limit the obligations of the Contractor in the event that the City or any of those named above should suffer any injury or loss in excess of the amount actually recoverable through insurance. Furthermore, there is no requirement or obligation for the City to seek any recovery against the Contractor's insurance company before seeking recovery directly from the Contractor.

END.

**EXHIBIT 2
TO CONTRACT
BETWEEN CITY OF ROANOKE AND
FOR _____**

REFERENCE: ITB# 16-05-02

SCOPE OF WORK

The following are the services and/or items that the Successful Bidder will be required to provide and such services are to be included in the bids.

To be added after Award to Successful Bidder.

**EXHIBIT 3
TO CONTRACT
BETWEEN CITY OF ROANOKE AND
FOR _____**

REFERENCE: ITB# 16-05-02

BID FORM

To be added after Award to Successful Bidder.

ATTACHMENT D
TO

ITB#16-05-02

CARDS PAYABLE APPLICATION

The City of Roanoke is committed to effective and efficient use of its financial resources. To support this commitment, the City implemented an electronic Card Payables program to streamline the accounts payable process. This program will allow the use of MasterCard Virtual Card Numbers (VCNs) from a well-known banking institution, Fifth Third Bank, to make electronic payments.

A unique VCN number will be issued for each invoice transaction. The VCN will be issued by the City upon approval and delivered via secure email from the Bank to the designated individual of the applying company (applicant). Instructions will be provided on how to retrieve the assigned VCN and how to provide the required invoice detail. The VCN can be processed through a normal point of sale (POS) terminal. Upon acceptance of this payment arrangement the applicant will need to ensure the Bank's email address is allowed through its organization's security firewall.

By accepting the Bank's Card Payables VCN as a form of payment, the applicant may also take advantage of the following Purchasing Card benefits:

- ***Improved cash flow*** - receive payment in 48 – 72 hours from invoice approval
- ***Reduced credit and collection expenses*** – reduce administrative costs incurred on collections and late payments
- ***Rate Improvement*** – potential eligibility for favorable Bank discount rates

Please complete page 2 of this attachment and return it along with your bid form so we can update our vendor records. *Your acceptance of this method of payment will have no bearing on the evaluation or award of this solicitation.*

A confirmation email with additional information and instructions will be sent from accounts.payable@roanoke.gov.

The City is committed to this initiative and encourages support from its vendors. The program should prove beneficial to both of the City and vendor organizations.

Please address any questions to Rene Satterwhite at 540-853-5209 or rene.satterwhite@roanokeva.gov.

Please complete the following information and return it along with your bid form.

- I agree to accept Purchasing Cards or Card Payables VCNs as a form of payment from the City of Roanoke
Yes ☐ No ☐ (Credit Card transaction fees may apply)
- I am a current MasterCard merchant acceptor.
Yes ☐ No ☐ (Credit Card transaction fees may apply)
- I would like to be contacted to become a MasterCard acceptor or to discuss my current merchant processing arrangement:
Yes ☐ No ☐

Company Name: _____

TIN _____

Contact Name: _____

Address: _____

City, State, ZIP _____

Email Address: _____

Fax Number: _____

Phone Number: _____

Signed: _____

Title: _____

Date: _____

-----For office use only-----

Vendor # _____ Email verification sent _____ Entered/by Date

Advantage _____

Entered/by Date 5th 3rd Direct _____

Approved AP Supervisor _____ Approved Accounting _____